State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT of ENVIRONMENTAL PROTECTION
Division of Air Quality
Bureau of Air Permits
MAILCODE: 401-02
401 E. State Street, 2nd floor, P.O. Box 420
Trenton, NJ 08625-0420

BOB MARTIN
Acting Commissioner

December 7, 2011

Mr. John Filippelli, Acting Director
Division of Environmental Planning and Protection
United States Environmental Protection Agency – Region 2
290 Broadway – 25th Floor
New York, New York 10007-1866

Dear Mr. Filippelli:

Enclosed is a supplement to the New Jersey Department of Environmental Protection's (NJDEP) 2009 Regional Haze State Implementation Plan (SIP)[1] that fulfills New Jersey's obligation to complete its review of facilities subject to Best Available Retrofit Technology (BART) and determination of required BART controls. The NJDEP submitted its initial BART determinations to the United States Environmental Protection Agency (USEPA) Region 2 on March 2, 2011.[2] These facilities included: 1) PSEG Hudson Generating Station, 2) Chevron Products, and 3) ConocoPhillips Bayway Refinery.

USEPA Region 2 subsequently identified three EGUs listed that were in operation as early as 1962, but were not included in NJDEP's final BART determination. These EGUs are: 1) Vineland Municipal Electric Utility (VMEU) - Howard M. Down, Unit 10, and 2) BL England Generating Station, Units 1 and 2.

The final Mid-Atlantic/Northeast Visibility Union (MANE-VU) list of applicable BART-eligible sources developed by NESCAUM[3] was the result of an iterative process spanning several years. At that time, these sources were anticipated to permanently shutdown as a result of enforceable agreements that were negotiated concurrent with the regional BART process. NJDEP has consequently determined that these facilities are subject to BART under the Regional Haze Rule, and that the enforcement obligations now in place, including options to shut down, add controls, or repower, are consistent with the federal BART requirement.

This supplement to the Regional Haze SIP identifies the level of control representing BART, establishes a BART emission limit, and ensures timely compliance for qualified equipment located at 1) PSEG Hudson Generating Station, 2) Chevron Products, 3) ConocoPhillips Bayway

---

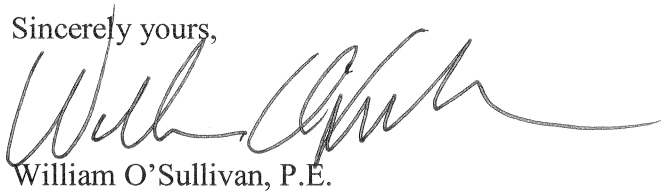
[1] http://www.state.nj.us/dep/baqp/2008%20Regional%20Haze/Regional%20Haze%20SIP%20Final2009.pdf
[2] http://www.state.nj.us/dep/baqp/sip/BART%202011_1.pdf
[3] NESCAUM. Five-Factor Analysis of BART-eligible Sources Survey of Options for Conducting BART Determinations. Boston, MA; June 2007.

Refinery, 4) Vineland Municipal Electric Utility (VMEU) - Howard M. Down, and 5) BL England Generating Station.

On July 25, 2011, the NJDEP forwarded an electronic copy of the proposed technical addendum to NJDEP's BART determinations to your office for review. NJDEP posted the proposed BART addendum, fact sheet, and public notice on the Air Quality Permitting Program's website and also published a public notice in The Press of Atlantic City newspaper on August 3, 2011. The public comment period ended on September 2, 2011. Comments were received from the Sierra Club and from Pillsbury Winthrop Shaw Pitman LLP on behalf of RC Cape May LLC, owner of BL England Generating Station. This SIP supplement includes the updated technical support addendum with a summary of the comments received, as well as NJDEP's response to the comments, public notice, and effective permit requirements. Also enclosed are two public notice affidavits, a SIP completeness checklist, and a CD containing the pertinent pages of the Title V Operating Permits of the five BART facilities identified in this letter. Please note that we have crossed out the non-BART requirements in the Operating Permits which are not part of this submittal.

If you have any questions regarding this SIP supplement, please contact Margaret Gardner at (609) 292-7095.

Sincerely yours,



William O'Sullivan, P.E.
Director, Division of Air Quality

Enclosure(s): Addendum to BART Technical Support Document
Public notice affidavits
SIP Completeness checklist
Permit requirements on CD

c: Raymond Werner, Chief, Air Programs Branch, USEPA Region II
Richard Ruvo, Chief, State Implementation Plan Section, USEPA Region II
Jane Kozinski, Assistant Commissioner
Margaret Gardner

Technical Addendum to Final BART Determinations for Affected BART-eligible Sources in the State of New Jersey

Technical Support Document

State of New Jersey Department of Environmental Protection

Division of Air Quality

Bureau of Air Permits

401 E. State Street, 2nd floor, P.O. Box 27
Trenton, NJ 08625-0027

December 7, 2011

Table of Contents

1.0 ADDENDUM TO BEST AVAILABLE RETROFIT TECHNOLOGY (BART) DETERMINATIONS

1.1 Introduction

To fulfill its obligation to complete its review of facilities subject to BART,[1] the New Jersey Department of Environmental Protection (NJDEP) submitted its BART determinations to the United States Environmental Protection Agency (USEPA) Region 2 on March 2, 2011.[2] These facilities included: 1) PSEG Hudson Generating Station, 2) Chevron Products, 3) Amerada Hess Port Reading Refinery, 4) ConocoPhillips Bayway Refinery, and 5) Sunoco Eagle Point.

When asked by USEPA Headquarters to confirm its inventory of BART-eligible coal-fired electric generating units (EGUs) in the Region, as part of an analysis to determine if the Transport Rule is better than BART, USEPA Region 2 subsequently identified three EGUs listed that were in operation as early as 1962, but were not included in NJDEP's BART determination. These EGUs are: 1) Vineland Municipal Electric Utility (VMEU) - Howard M. Down, Unit 10, and 2) BL England Generating Station, Units 1 and 2.

The Mid-Atlantic/Northeast Visibility Union (MANE-VU) formed a BART workgroup consisting of member states, including New Jersey, to assist with the BART requirements of the Regional Haze rule including the identification of potentially BART-eligible sources and the emission units that comprise them. The final MANE-VU list of applicable BART-eligible sources developed by NESCAUM[3] was the result of an iterative process spanning several years. At that time, these sources were anticipated to permanently shutdown as a result of enforceable agreements that were negotiated concurrent with the regional BART process. These enforceable agreements remain, and include options to control or repower.

NJDEP has consequently determined that these facilities should be included in this addendum to the Final BART Technical Support Document to provide a complete picture on the status and commitments to reduce visibility-impairing emissions from these facilities through shutdown, controls, repower, or fuel switch consistent with BART.

1.2 BART-Eligibility

To be BART-eligible a facility must belong to one of 26 specific source categories with existing stationary emission units (or pieces of equipment) which meet specific criteria for start-up dates, and potential emissions of any visibility impairing pollutants greater than 250 tons per year including NO_x, SO_2, and PM_{10}.[4] These two facilities are classified under the source category of

---

[1] http://www.state.nj.us/dep/baqp/2008%20Regional%20Haze/Regional%20Haze%20SIP%20Final2009.pdf
[2] http://www.state.nj.us/dep/baqp/sip/BART%202011_1.pdf
[3] NESCAUM. Five-Factor Analysis of BART-eligible Sources Survey of Options for Conducting BART Determinations. Boston, MA; June 2007.
[4] 64 Fed. Reg. 35737; July 1, 1999

"Fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input." Upon reviewing the "in operation" dates and current potential emissions from the applicable equipment still in existence at each named facility, NJDEP determined that Vineland MEU and BL England are BART-eligible sources. See Table 1A below.

Table 1A List of Additional BART-eligible Sources in New Jersey

Source category/ Facility	Cumulative visibility impairing pollutants from BART applicable equipment[1,2] Potential to Emit (PTE) in tons per year (tpy)			BART-eligible source (PTE > 250 tpy)
	NO_x	SO_2	PM_{10}	
Power plants:				
Vineland MEU Howard M. Down	442	1,718	131	Yes
RC Cape May BL England	10,629	40,370	4,410	Yes

Notes:
[1]equipment put in place August 7, 1962 through August 7, 1977.[5]
[2]BART-eligible units were defined in the Regulatory Impact Analysis[6] as those that were online after August 7, 1962, and under construction prior to August 7, 1977.

1.2.1 Identification of BART-eligible Sources

NJDEP followed the step-by-step process for determining BART-eligibility provided in Appendix Y to Part 51, Section II.[7] The steps in identifying BART-eligible sources are:

Step 1: list existing equipment at each of these electric generating power plants;
Step 2: verify the start-up dates of the equipment and check if within the 1962-1977 time window; and
Step 3: compare the cumulative potential emissions (PTE) from qualified equipment identified in Steps 1 and 2 to the 250 tons per year (tpy) cutoff for any single visibility impairing pollutant.

Tables 2A and 3A display the information gathered from the steps above for 1) Vineland MEU, and 2) BL England, respectively.

1.2.2 Vineland Municipal Electric Utility – Howard M. Down (PI#75507) – Vineland, Cumberland County

The VMEU currently has four pieces of equipment, one No. 6 fuel oil-fired boiler (E10), ancillary equipment (E12 and E13) and an emergency generator (E22), that fall within the

[5] http://www.epa.gov/fedrgstr/EPA-AIR/2005/July/Day-06/a12526.pdf
[6] http://www.epa.gov/oar/visibility/pdfs/bart_ria_2005_6_15.pdf
[7] http://edocket.access.gpo.gov/cfr_2008/julqtr/pdf/40cfr51AppY.pdf

applicable BART time frame. The cumulative permitted PTE from these qualified units exceed the BART threshold for NO_x and SO_2 emissions (442 and 1718, respectively), and therefore this facility is a BART-eligible source. See Table 2A below.

Unit 10 (E10) is a 357 MMBtu//hr boiler that currently combusts No.6 fuel oil. Coal operation ceased in 2010, as a result of State and federal enforcement agreements. The bottom ash handling system (E12) and the fly ash handling system (E13) are support systems to E10 with the potential to emit particulate emissions only. The bottom ash and the fly ash handling systems have blower filters, and the PTE totals for these qualified units are below de minimis[8] levels for PM_{10}. The distillate fuel oil-fired emergency generator (E22), rated at 2.3 MMBtu/hr, has not operated in more than ten years as reported to NJDEP in its electronic emission statements. The facility is also required to maintain a record of emergency use.

The NJDEP Administrative Consent Order (NEA070001) required elimination of coal operation of E10 after December 31, 2010 (permit activity BOP090003 – effective). Moreover, the federal Consent Decree (Civil Action No. 1:11-cv-1826-RMB-JS) requires VMEU to add on selective non-catalytic reduction (SNCR) for NO_x control by September 1, 2012, or cease operating E10 by September 1, 2012. VMEU decided to permanently cease operation of E10.

VMEU submitted a deactivation request to Pennsylvania-New Jersey-Maryland (PJM) Interconnection on June 6, 2011, and also submitted a written certification to USEPA Region 2 and NJDEP on July 1, 2011. In accordance with the CD, VMEU submitted a timely Title V operating permit modification to NJDEP requesting the addition of a new requirement that includes the retirement date of September 1, 2012, for E10 (permit activity BOP110001 – effective). When this boiler permanently shuts down, the cumulative permitted PTE for NO_x and SO_2 emissions from the remaining qualified units do not exceed the BART threshold this source. This facility will no longer be considered BART-eligible. See Attachments 1, 2, 3, and 4.

Table 2A List of Equipment, Start-up Date, Potential Emissions, and Eligibility Determination – Vineland Municipal Electrical Utility

VMEU Howard M. Down (PI#75507)							
Identify emission units		Verify dates		If yes, compare PTE to 250 tpy cutoff			
Equip. NJID	Equipment Description	Start-up Date	8/7/62 – 8/7/77	Potential to Emit (PTE) in tons per year (tpy)			BART eligible
				NO_x	SO_2	PM_{10}	
E10	Unit 10 boiler	1969	Yes	438	1,718	131	Yes[1]
E11	Unit 11 turbine	2010	No	—	—	—	No
E12	Bottom ash Handling	1969	Yes	N/A	N/A	D[2]	No[2]
E13	Fly ash handling	1969	Yes	N/A	N/A	D[2]	No[2]
E14	Bottom ash silo	1952	No	—	—	—	No
E22	Em. generator	1969	Yes	3.5	0.18	0.33	Yes[1]

[8] http://www.state.nj.us/dep/aqm/Sub8.pdf

VMEU Howard M. Down (PI#75507)							
Identify emission units		Verify dates		If yes, compare PTE to 250 tpy cutoff			
Equip. NJID	Equipment Description	Start-up Date	8/7/62 – 8/7/77	Potential to Emit (PTE) in tons per year (tpy)			BART eligible
				NO_x	SO_2	PM_{10}	
Visibility Impairing Pollutants				**NO_x**	**SO_2**	**PM_{10}**	**PTE**
Totals (tpy):				**442**	**1718**	**131**	**> 250**

Notes:
[1]equipment with applicable emissions to be considered cumulatively in determining the facility's BART eligibility
[2]De minimis (D) – potential to emit below de minimis level (less than 0.05 pounds per hour)

1.2.3 BL England – RC Cape May (PI#73242) – Beesleys Point, Cape May County

BL England currently has five pieces of equipment, or sources, and one emission unit that includes the fuel handling equipment, which fall within the BART time frame with cumulative permitted PTE above the 250 tpy applicability thresholds for NO_x, SO_2, and PM_{10} (10,629, 40,370 and 4,410, respectively). Therefore, this facility is a BART-eligible source. See Section 1.53 for details regarding existing controls and BART determinations.

BL England is subject to an Administrative Consent Order (ACO) issued by NJDEP and agreed to by Atlantic City Electric Company on January 24, 2006. RC Cape May, current owner/operator, assumed the obligations of the ACO in subsequent amendments with a revised timeline to either repower or meet the NO_x, SO_2, and PM performance standards of the ACO. The amended ACO primarily affects Units 1 and 2. See Attachment 6.

Unit 1 (E1) is a coal-fired boiler, limited to ozone season operation, that must meet performance standards for NO_x, SO_2 and PM by no later than December 15, 2013, as set forth in the ACO Amendment dated January 13, 2010. See Table 9A for a summary of requirements set forth in the ACO Amendment. RC Cape May indicated that there was some uncertainty regarding the commencement date of operation for this boiler. NJDEP included Unit 1 in its BART review presuming that the "in operation" date occurred after August 7, 1962, and if during the public comment period, the date of operation was determined to be outside the BART time frame based on new documentation, then NJDEP would update its determination before finalizing its BART submittal to USEPA Region 2.

RC Cape May submitted a letter requesting that Unit 1 be granted grandfathered status and be removed from NJDEP's list of BART-eligible sources based on new information including construction schedules and other supporting documents, and stated that there is confusion concerning the phrases "in place," "in existence," and "in operation" as used by the Clean Air Act, USEPA's Appendix Y Guidelines, and NJDEP's Technical Support Document. See Attachments 7. In Appendix Y to Part 51, the Guidelines give a relevant example of what "in

operation" means under step 2 of section II.A.2.[9] Whether this unit is subject to BART or not, the enforceable agreements ensure that this unit will meet BART requirements.

Unit 2 (E2) is a coal-fired boiler that must meet performance standards for SO_2 and PM by no later than May 1, 2010, and NO_x performance standards by May 1, 2012, as set forth in the ACO Amendment dated January 13, 2010. See Table 10A for a summary of requirements set forth in the ACO Amendment.

Unit 3 boiler (E3) is permitted to burn No. 6 fuel oil, and primarily operates during the ozone season as a high electric demand day (HEDD) unit.[10]

The coal fuel handling systems (E9 – 20), as applicable, emit particulate emissions only and support the coal-fired units (E1 and E2). The conveying systems are covered and the fugitive emissions are controlled with wet suppression. The cooling tower (E21) also emits particulates only and supports Unit 3 (E3). One other BART-qualified equipment includes an emergency fire water pump. See Table 3A below.

Table 3A List of Equipment, Start-up Date, Potential Emissions, and Eligibility Determination – BL England Generating Station

BL England Generating Station (PI#73242)							
Identify emission units		Verify dates		If yes, compare PTE to 250 tpy cutoff			
Equip. NJID	Equipment Description	Start-up Date	8/7/62 – 8/7/77	Potential to Emit (PTE) in tons per year (tpy)			BART eligible
				NO_x	SO_2	PM_{10}	
E1	Unit 1 boiler	1962	Yes	4,080[2]	31457[3]	1,198	Yes[1]
E2	Unit 2 boiler	1964	Yes	5,022[4]	1,015	952[5]	Yes[1]
E3	Unit 3 boiler	1974	Yes	1,506	7,897	2,215	Yes[1]
E4	Diesel electric generator EG1	1961	No	—	—	—	No
E5	Diesel electric generator EG2						
E6	Diesel electric generator EG3						
E7	Diesel electric generator EG4						
E8	Em. fire water diesel engine	1968	Yes	21.6	1.49	1.53	Yes[1]
E9 – 20	Coal fuel handling	1968	Yes	N/A	N/A	6.1[6]	Yes[1]
E11		1989	No				No

[9] http://edocket.access.gpo.gov/cfr_2008/julqtr/pdf/40cfr51AppY.pdf
[10] http://www.state.nj.us/dep/aqm/Sub19.pdf

BL England Generating Station (PI#73242)							
Identify emission units		Verify dates		If yes, compare PTE to 250 tpy cutoff			
Equip. NJID	Equipment Description	Start-up Date	8/7/62 – 8/7/77	Potential to Emit (PTE) in tons per year (tpy)			BART eligible
				NO_x	SO_2	PM_{10}	
E17 & E18		1995					
E21	Cooling tower	1974	Yes	N/A	N/A	127.5	Yes[1]
Visibility Impairing Pollutants				**NO_x**	**SO_2**	**PM_{10}**	**PTE**
Totals (tpy):				**10,629**	**40,370**	**4,410**	**> 250**

Notes:
[1]equipment with applicable emissions to be considered cumulatively in determining the facility's BART eligibility
[2]until December 14, 2013; on and after December 15, 2013 NO_x (total) shall be 626.3 tons per year (85% reduction)
[3]until December 14, 2013; on and after December 15, 2013 SO_2 (total) shall be 854.1 tons per year (97% reduction)
[4]until April 30, 2012; on and after May 1, 2012 NO_x (total) shall be 770.9 tons per year (85% reduction)
[5]to be established from stack test results after SCR installation
[6]annual emission limit for E9 – E20 (combined, Unit 7)

1.3 Subject to BART

Based on the cumulative assessment of all BART-eligible sources in the MANE-VU region, all member states with BART-eligible facilities contribute to visibility impairment at Class I areas.[11] Therefore, as a member state of MANE-VU, the State of New Jersey adhered to the MANE-VU Board decision that any source that meets the BART eligibility requirements is subject to BART review.[12]

1.4 Evaluation of BART Analyses

For each qualified emission unit at an eligible facility, BART must be established for pollutants reasonably anticipated to impair visibility. NJDEP developed tables summarizing each facility's current compliance requirements, including enforceable consent decree requirements, and recent

[11] NESCAUM. Five-Factor Analysis of BART-eligible Sources Survey of Options for Conducting BART Determinations. Boston, MA; June 2007.
[12] Ibid.

rule development to help determine the best control options, establish emission limits, and set compliance deadlines for the BART-qualified emission units.[13]

1.5 Fossil fuel-fire steam Electric Power Plants of more than 250 Million British Thermal Units (BTU) per Hour Heat Input

Power plants are one of 26 specific source categories identified as being applicable to the BART requirement. The BART requirement applies to qualified emission units located at Fossil fuel-fire steam Electric Power Plants of more than 250 Million British thermal units (BTU) per hour heat input that generate electricity for sale. Appendix Y Guidelines for BART require coal-fired electric generating units (EGUs) greater than 200 MW located at greater than 750 MW power plants meet 0.15 lb/MMBtu emission limit for SO_2; and for any size oil-fired units, the sulfur fuel content must be limited to 1 percent or less by weight. The BART guidelines also set year-round use of SCR or SNCR as the presumptive BART for NO_x for EGUs currently using these controls. For oil and gas-fired EGUs current combustion controls should be part of the BART determination.

1.5.1 Power Plants

New Jersey adopted a rule at N.J.A.C. 7:27-27 to control mercury emissions from specific sources including coal-fired boilers.[14] Compliance with the mercury standard for coal-fired boilers was contingent upon the installation and operation of air pollution control systems to meet the NO_x, SO_2, and PM standards shown in Table 4A below by December 15, 2012. Note that the maximum allowable SO_2 and PM emission rates for any size coal-fired boiler are 0.150 lb/MMBtu based on 30-day rolling average and 0.030 lb/MMBtu based on 3-hour average.
.

Table 4A N.J.A.C. 7:27-27.7(b) – Maximum Allowable NO_x, SO_2 and PM Emission Rates for Coal-fired boilers (Operative on and after December 15, 2012)

Pollutant	Emission Limit (lb/MMBtu)	Boiler Type
NO_x	0.100	Dry bottom
	0.130	Wet bottom
SO_2	0.150	
PM	0.030*	
*also found under N.J.A.C 7:27-4.2(c)		

[13] http://edocket.access.gpo.gov/cfr_2008/julqtr/pdf/40cfr51AppY.pdf
[14] http://www.state.nj.us/dep/aqm/Sub27.pdf

More recently, NJDEP amended N.J.A.C. 7:27-4 Control and Prohibition of Particles from Combustion of Fuel on March 20, 2009, to restrict particle emissions from any coal-fired boiler with particle control that is constructed, installed or reconstructed as of May 19, 2009, to no greater than 0.0150 lbs/MMBtu.

NJDEP's NO_x rules for boilers serving EGUs were also revised on March 20, 2009. Unless subject to more stringent permit limits or otherwise specified in an enforceable agreement, the rules require more stringent NO_x limits for boilers serving EGUs based on output and measured in pounds per megawatt-hour (lbs/MW-hr) beginning May 1, 2015. See Table 5A below.

Table 5A N.J.A.C. 7:27-19.4 Table 3 – Maximum Allowable NO_x Emission Rates for Boilers Serving Electric Generating Units (Operative on and after May 1, 2015)

Fuel Type	lbs/MWhr
Coal	1.50
Heavier than No. 2 fuel oil	2.00
No. 2 and lighter fuel oil	1.00
Gas only	1.00

Also on March 20, 2009, New Jersey adopted an amendment to its Sulfur in Solid Fuels rule at N.J.A.C. 7:27-10.2(h) which specifies that on and after December 15, 2012, the owner or operator of any source that combusts solid fuel shall cause it to emit SO_2 at a 24-hour emission rate no greater than 0.250 lbs/MMBTU gross heat input for every calendar day, and at a 30-calendar-day rolling average emission rate no greater than 0.150 lbs/MMBTU gross heat input.[15]

The coal-fired boilers addressed in this document are permitted to combust No.6 fuel oil. In 2010, NJDEP amended N.J.A.C. 7:27-9, Sulfur in Fuels, to lower the maximum sulfur content standard of all grades of fuel oil in most Zones. VMEU and BL England are located in Zone 1.[16] See Table 6A below.

Table 6A N.J.A.C. 7:27-9 – Sulfur in Fuels

Maximum Allowable Sulfur Content Standards – for Zone 1 only from Tables 1A and 1B						
Fuel grade	Through 06/30/2014		Effective 07/01/2014 - 06/30/2016		Effective 07/01/2016	
	% by wt	ppm	% by wt	ppm	% by wt	ppm
No. 2	0.3	3,000	0.05	500	0.015	15
No. 6	2.0	20,000	0.5	5,000	0.5	5000

1.5.2 Vineland Municipal Electric Utility (PI#75507) BART Analysis

[15] http://www.state.nj.us/dep/aqm/Sub10.pdf
[16] http://www.state.nj.us/dep/aqm/Sub9.pdf

Based on the current Title V permit, Unit 10 is a 357 MMBtu/hr boiler that was "in operation" in May, 1970. The NJDEP's mercury rule allows facilities to shut down any coal-fired boiler in lieu of meeting the mercury standard. VMEU entered into an enforceable agreement with NJDEP to shut down Unit 10 by December 15, 2012. VMEU also agreed in the State's ACO to cease burning coal after December 31, 2010. See Attachment 1.

Subsequently VMEU entered into an enforceable agreement with the USEPA on March 10, 2011, to install SNCR on Unit 10, or deactivate no later than September 1, 2012. See Attachment 2. VMEU decided to permanently shut down the operation of Unit 10 and on June 6, 2011, requested that PJM retire this unit from service. See Attachment 3. On July 1, 2011, USEPA Region 2 and NJDEP received a written certification of its decision. By July 30, 2011, VMEU was required to submit a request to remove Unit 10 from its Title V operating permit effective September 1, 2012. See Attachment 4. The requirements of the ACO and CD are summarized in Table 7A below.

Table 7A Summary of 2011 Consent Decree (CD)[17] and 2007 Administrative Consent Order (ACO)[18] for Unit 10 – Vineland Municipal Electrical Utility (PI#75507)

Equip. NJID	Pollutant	Control strategy	Emission limit	Compliance date
E10	NO_x	Interim:		
		LNB & OFA	Annual tonnage cap (438 tpy); 0.28 lb/MMBtu 30-day avg.	Effective BOP100003
		Final:		
		Install SNCR, or permanently cease operation of Unit 10		September 1, 2012
	SO_2	Interim:		
		Cease burning coal	—	Effective BOP100003
		Use low sulfur No. 6 fuel oil – 0.7% by wt.	Annual tonnage cap (1,718 tpy); 392.3 lb/hr	Effective BOP080001

NJDEP has determined that once shut down, VMEU no longer qualifies as a BART-eligible source. Receipt of the modification request to delete Unit 10 from the Title V operating permit was required no later than July 30, 2011. Permit activity BOP110001 was created in New Jersey Environmental Management System (NJEMS) on July 29, 2011

1.5.3 BL England Generating Station (PI#12202) BART Analysis

BL England Generating Station is a 449 MW electric utility steam generating plant with three boilers serving electric generating units (EGUs) that are subject to BART review. E1 and E2 are coal-fired and subject to controls and enforceable emission limits due to an Administrative Consent Order (ACO) and supplemental Amendments. E3 combusts No.6 fuel oil.

Unit 1 is limited to blended coal including bituminous and low sulfur coal and supplemented with up to 8% tire derived fuel (TDF), or No. 6 fuel oil. The unit's coal authorization plan was extended by the ACO until December 14, 2013, when it is required to meet more stringent short term SO_2 standards as part of the agreement. OFA, SNCR, and ESP provide continuous air pollution control of NO_x, SO_2 and PM emissions. SCR and scrubber will be installed by December 15, 2013. Operation of SNCR after installation of the SCR is optional.

[17] Consent Decree; Civil Action No. 1:11-cv-01826 (RMB-JS); filed 05/02/11, p8
[18] 01/24/2006 Administrative Consent Order, p2 (NEA070001)

Unit 2 is limited to blended coal including bituminous and low sulfur coal and supplemented with up to 8% tire derived fuel (TDF), or No. 6 fuel oil. NO_x, SO_2 and PM emissions from this boiler are continuously controlled with OFA, SNCR, wet FGD scrubber, and ESP. SCR will be installed by May 1, 2012. Operation of SNCR after installation of the SCR is optional.

Unit 3 boiler combusts No. 6 fuel oil and is permitted to use No. 2 fuel oil for start-up. NO_x and PM emissions from this boiler are continuously controlled with SNCR and a mechanical cyclone, respectively.

The coal fuel handling systems (E9, E10, E12, E13, E14, E15, E16, E19, and E20) are support systems to the coal-fired boilers (E1 and E2). The unloading, processing, and transferring systems are covered, and fugitive particulate emissions are controlled with surfactant-based wet suppression as required by the Title V permit. The cooling tower (E21) supports Unit 3 boiler (E3) and has the potential to emit particulate emissions only. The natural draft cooling tower (E21) circulates treated sea water in a closed loop system and is equipped with high efficiency drift eliminators, which is BART for cooling towers. These pieces of equipment, E9 – 20, as applicable, and E21, are either de minimis or have BART control. See Table 8A for a summary of current compliance requirements.

Table 8A Summary of Current Title V Permit Conditions for BART Qualified Equipment (BOP100003) – BL England (PI#73242)

Equip. NJID	Equipment Description	Heat Input	Fuel type	NO_x		SO_2		PM_{10}		Notes
				Existing Control	Allowable emission limit	Existing Control	Allowable emission limit	Existing Control	Allowable emission limit	
		(MMBtu/hr)			(lb/hr)		(lb/hr)		(lb/hr)	
1. E1	U1 boiler (129 MW)	1300	Coal w/ up to 8% TDF* or #6FO	SNCR& OFA	780 For coal: 0.60 lb/MMBtu calendar day avg. (5/1-9/30) 0.60 lb/MMBtu 30-day rolling avg.(10/1-4/30) For oil: 0.43 lb/MMBtu calendar day avg. (5/1-9/30); 0.43 lb/MMBtu 30-day rolling avg.(10/1-4/30)	Low sulfur coal plan 1.9% monthly; 1.7% 12-month; Low sulfur fuel oil 1% by wt	7,182	ESP	273.59 PM, 130	Coal reauthorization plan in place until Unit 1 is shutdown or by 12/14/2013, whichever is sooner Subject to N.J.A.C. 7:27-9.2 lower sulfur #6FO (0.5%) effective 07/01/14

Equip. NJID	Equipment Description	Heat Input (MMBtu/hr)	Fuel type	NO_x Existing Control	NO_x Allowable emission limit (lb/hr)	SO_2 Existing Control	SO_2 Allowable emission limit (lb/hr)	PM_{10} Existing Control	PM_{10} Allowable emission limit (lb/hr)	Notes
				See note.	0.110 lb/MMBtu 30-day roll avg.& 0.150 lb/MMBtu 24-hr avg. (effective 12/15/13)	See note.	0.150 lb/MMBtu (30-day roll. avg.); 0.250 lb/MMBtu 24-hr avg. (effective 12/15/13)	See note.	PM, 0.030 lb/MMBtu 30-day roll. avg. (effective 12/15/13)	ACO: repower** by 12/15/11, or meet NO_x, SO_2 and PM performance standards by 12/15/2013[19]
2. E2	U2 boiler (160 MW)	1600	Coal w/ up to 8% TDF* and/or #6 FO	SNCR& OFA	960 For coal: 0.60 lb/MMBtu calendar day avg. (5/1-9/30) 0.60 lb/MMBtu 30-day rolling avg.(10/1-4/30) For oil: 0.43 lb/MMBtu calendar day avg.	FGD wet scrubber & sorbent injection; Low sulfur fuel oil 1% by wt	1,336 0.150 lb/MMBtu (30-day roll. avg.); 0.250 lb/MMBtu 24-hr avg. (effective 05/01/10)	ESP (updated to meet ACO standard); ESP need not be energized during No.6 oil	PM, 0.030 lb/MMBtu 30-day roll. avg. (effective 05/01/10)	ACO: repower** by 12/15/11, or meet NO_x performance standards by 05/01/2012[20] Subject to N.J.A.C. 7:27-9.2 lower sulfur #6FO (0.5%) effective 07/01/14

[19] Administrative Consent Order Amendment, certified 01/13/2010, p6; and 01/24/2006 Administrative Consent Order
[20] Ibid.

Equip. NJID	Equipment Description	Heat Input (MMBtu/hr)	Fuel type	NO_x Existing Control	NO_x Allowable emission limit (lb/hr)	SO_2 Existing Control	SO_2 Allowable emission limit (lb/hr)	PM_{10} Existing Control	PM_{10} Allowable emission limit (lb/hr)	Notes
					(5/1 -9/30) 0.43 lb/MMBtu 30-day rolling avg.(10/1-4/30)			operation		
				OFA & install SCR by 05/01/12	0.110 lb/MMBtu 30-day roll avg.& 0.150 lb/MMBtu 24-hr avg. (effective 12/15/12)					
3. E3	U3 boiler (160 MW)	1720	#6FO & #2FO for S/U	SNCR (year round)	344 0.2 lb/MMBtu	Low sulfur fuel oil 1% by wt	1803	Cyclone	505 PM, 172	Subject to N.J.A.C. 7:27-9.2 lower sulfur #6FO (0.5%) effective 07/01/14
4. E8	U6 emergency fire water pump engine	1.12	diesel	None	4.94	0.3% S by wt	0.43	None	0.35	Subject to N.J.A.C. 7:27-9.2 lower sulfur #2FO (0.05%) effective 07/01/14 and (0.015%) effective 07/01/16; typically operates less than two hours per year

Equip. NJID	Equipment Description	Heat Input (MMBtu/hr)	Fuel type	NO_x Existing Control	NO_x Allowable emission limit (lb/hr)	SO_2 Existing Control	SO_2 Allowable emission limit (lb/hr)	PM_{10} Existing Control	PM_{10} Allowable emission limit (lb/hr)	Notes
5. E9	U7 Coal and tire-derived fuel handling	N/A	N/A	N/A		N/A		All operations covered; All wet spray dust suppressor used for fugitive dust except E15, E19 and E20	0.21	
E10									0.21	
E12									0.062	
E13									D***	
E14									D	
E15									D	
E16									D	
E19									D	
E20									D	
6. E21	U8 Unit 3 Cooling tower	N/A	N/A	N/A		N/A		High eff. drift eliminator	29.1	
Note: a new SCR and scrubber, as well as an ESP upgrade, will be required to meet ACO Performance Standards on U1										

* tire derived fuel (TDF)

** "Repower" means the replacement of an existing coal-fired boiler with a new heat source (e.g. natural gas or distillate oil), or new coal-combustion technology (e.g. circulating fluidized bed boilers or integrated gasification combined-cycle (IGCC") technology as defined in 01/24/2006 Administrative Consent Order.

*** De minimis (D) – potential to emit below de minimis level (less than 0.05 pounds per hour

A. <u>Unit 1 Boiler (E1):</u>

Unit 1 is a 1300 MM/Btu Babcock and Wilcox, cyclone-fired, wet bottom boiler with a rating of 129 MW. According to the ACO amendment, Unit 1 must repower by December 15, 2011, or meet performance standards by December 15, 2013 as shown in Table 9A. If Unit 1 does not meet the emission rates by December 15, 2013, Unit 1 may not restart unless RC Cape May obtains a permit modification which incorporates advances in the art of air pollution control according to N.J.A.C. 7:27-22.35. If RC Cape May decides to repower, it must incorporate advances in the art of air pollution control which may result in more stringent emission limits. Before repowering, or installing new controls, RC Cape May will optimize the existing NO_x control to minimize NO_x emissions in the interim.

Table 9A Summary of 2010 Amendment to 2006 Administrative Consent Order[21] for Unit 1 – BL England (PI#73242)

Equip. NJID	Pollutant	Control strategy	Emission limit	Compliance date
E1	NO_x	Interim:		
		SNCR & OFA	4,080.7 tpy 0.60 lb/MMBtu calendar day avg. (5/1 -9/30) 0.60 lb/MMBtu 30-day rolling avg. (10/1-4/30)	Effective until 12/14/13 BOP100003
		Final:		
		Install SCR* (use of SNCR is optional after installation and operation of SCR) & OFA	626.3 tpy 0.110* lb/MMBtu 30-day rolling avg. 0.150 lb/MMBtu 24-hr avg.	Effective from 12/15/13 BOP100003
	SO_2	Interim:		
		Reauthorized low sulfur coal plan	31,457 tpy 7,182 lbs/hr and 1852 ppmvd	Effective until 12/14/13 BOP100003
		Final:		
		Install scrubber.	854.1 tpy 0.150 lbs/MMBtu	Effective from 12/15/13 BOP100003

[21] Administrative Consent Order Amendment, certified 01/13/2010, p6; and 01/24/2006 Administrative Consent Order, p37

Equip. NJID	Pollutant	Control strategy	Emission limit	Compliance date
			30-day rolling avg. 0.250 lbs/MMBtu 24-hr avg.	
	PM	Interim:		
		ESP	569.4 tpy 0.150 lbs/MMBtu	Effective until 12/14/13 BOP100003
		Final:		
		ESP update	170.8 tpy 0.030 lbs/MMBtu 30-day roll. avg.	Effective from 12/15/13 BOP100003
	Other	Repower by 12/15/11, or meet NO_x, SO_2 and PM performance standards by 12/15/2013		
Note: a new SCR and scrubber, as well as an ESP upgrade, will be required to meet ACO Performance Standards on U1				

B. <u>Unit 2 Boiler (E2):</u>

Unit 2 is a 1600 MMBtu/hr Babcock and Wilcox, cyclone-fired, wet bottom boiler with a rating of 160 MW. According to the ACO amendment, Unit 2 must repower by December 15, 2011, or meet performance standards for SO_2 and PM by no later than May 1, 2010 (completed), and NO_x performance standards by May 1, 2012. Before installing and operating the new SCR, RC Cape May will optimize the existing NO_x control to minimize NO_x emissions in the interim. See Table 10A.

Table 10A Summary of 2010 Amendment to 2006 Administrative Consent Order[22] for Unit 2 – BL England (PI#73242)

Equip. NJID	Pollutant	Control strategy	Emission limit	Compliance date
E2	NO_x	Interim:		
		SNCR& OFA	5,022.4 tpy 0.60 lb/MMBtu calendar day avg. (5/1 -9/30)	Effective until 04/30/12 BOP100003

[22] Administrative Consent Order Amendment, certified 01/13/2010, p6; and 01/24/2006 Administrative Consent Order

Equip. NJID	Pollutant	Control strategy	Emission limit	Compliance date
			0.60 lb/MMBtu 30-day rolling avg. (10/1-4/30)	
		Final:		
		Install SCR* (use of SNCR is optional after installation and operation of SNCR) & OFA	770.9 tpy 0.110 lb/MMBtu 30-day rolling avg. 0.150 lbs/MMBtu 24-hr avg.	Effective from 05/01/12 BOP100003
	SO_2	Final:		
		FGD wet scrubber & sorbent injection as necessary for control of H_2SO_4	1051.2 tpy 0.150 lbs/MMBtu 30-day rolling avg. 0.250 lbs/MMBtu 24-hr avg	Effective 05/01/10 BOP080001
	PM	Final:		
		ESP update	210.2 tpy 0.030 lbs/MMBtu 30-day roll. avg.	Effective 05/01/10 BOP080001
	Other	Repower by 12/15/11, or meet NO_x performance standards by 05/01/12		

C. <u>Unit 3 Boiler (E3):</u>

Unit 3 is a 1720 MMBtu/hr Combustion Engineering, oil-fired, tangential boiler with a rating of 160 MW. This unit typically operates as a HEDD unit during hot summer days. Table 11A below shows the hours of operation reported to NJDEP in its electronic emission statements. The declining use of No. 6 fuel oil is a general trend in the power industry.

Table 11A Reported Operating Time of Unit No. 3 Firing No. 6 Fuel Oil

U3, OS1 – Utility boiler firing No. 6 fuel oil			
Emission Year	Operating time (hours)	Emission Year	Operating time (hours)
1999	2,777	2005	1,462
2000	1,854	2006	881
2001	2,045	2007	1,102

U3, OS1 – Utility boiler firing No. 6 fuel oil			
Emission Year	Operating time (hours)	Emission Year	Operating time (hours)
2002	2,039	2008	373
2003	2,452	2009	172
2004	901	2010	159

On May 1, 2015, Unit 3 is required to meet an efficiency-based NO_x emission limit of 2.00 lb/MW-hr that is approximately equivalent to the current input-based emission limit of 0.2 lb/MMBtu in the Title V permit. Additionally, effective 07/01/2014, the sulfur in fuel content of No. 6 fuel oil will decrease, from the permitted 1.0% by wt, to an allowable 0.5% pursuant to N.J.A.C. 7:27-9.2.

1.6 Final BART Requirements

Under the Regional Haze rule, States must identify the best system of continuous emission control technology for each eligible source that is subject to BART. After a State has identified the level of control representing BART, it must establish an emission limit representing BART and must ensure compliance with that requirement no later than five years after the USEPA Region 2 approves the State Implementation Plan. The BART requirements must be included as operating permit conditions according to the procedures established in 40 CFR part 70, and the State regulations promulgated at N.J.A.C. 7:27-22.

With the shutdown of Unit 10 at VMEU by September 1, 2012, the cumulative PTE from qualified equipment is well below the emissions threshold for BART eligibility, and not subject to further BART review. BL England has two coal units which are subject to an enforcement agreement to install modern air pollution control by the end of 2012 and 2013; and an oil-fired boiler. RC Cape May, owner/operator of this power plant, has indicated it is evaluating the conversion of all three electric steam generating units to natural gas or No. 2 fuel oil. To the extent that RC Cape May decides to convert one or all of the units, NJDEP anticipates that RC Cape May would submit a specific proposal that addresses applicable requirements including BART.

Vineland Municipal Electric Utility:

On May 20, 2011, the USEPA entered into a CD with VMEU. As a result of its decision not to install SNCR on Unit 10, VMEU was required to submit a modification to NJDEP by July 30, 2011, requesting the deletion of Unit 10 boiler from its Title V operating permit effective September 1, 2012. NJDEP received a timely permit modification submittal from VMEU to incorporate the effective shutdown date for Unit 10 boiler. Permit activity number BOP110001 was approved on September 26, 2011.

BL England:

BL England currently has three boilers serving electric generating units (E1, E2 and E3), a fire pump engine, coal fuel handling systems (E9, E10, E12, E13, E14, E15, E16, E19, and E20) and a cooling tower that are subject to BART review. The fuel handling systems support the coal-fired boilers (E1 and E2). All of the fuel unloading, processing, and transferring operations are covered, and, with the exception of E15, E19 and E20, fugitive particulate emissions are controlled with surfactant-based wet suppression as required by the Title V permit. The cooling tower (E21) supports the Unit 3 boiler (E3) with the potential to emit particulate emissions only.

According to the Title V permit requirements, the salt water tower has drift eliminators to control salt water drift. NJDEP has determined that the existing particulate controls are BART for the fuel handling systems and the cooling tower.

On January 13, 2010, the NJDEP entered into an ACO Amendment with RC Cape May. NJDEP has determined that the NO_x, SO_2, and PM controls, emission limits, averaging times, and compliance dates from the ACO for the process are BART for E1 & E2. The ACO Amendment requirements for E1 and E2 are already included in the current approved Title V operating permit, BOP100003.

NJDEP has determined that the existing SNCR and mechanical cyclone air pollution control systems for oxides of nitrogen (NO_x), and particulate matter (PM), respectively, for E3, are BART and are included as applicable requirements in the current approved Title V operating permit, BOP100003. Beginning May 1, 2015, Unit 3 is subject to N.J.A.C. 7:27-19.4 Table 3 that restricts the maximum allowable NO_x emission rate to no greater than 2.00 lbs/MW-hr. In addition, a more stringent sulfur content of 0.5% by wt. for No. 6 fuel oil is effective on July 1, 2014, pursuant to NJDEP's sulfur in fuel rule at N.J.A.C.7:27-9.2.

1.7 Opportunity for Public Comment

A notice of opportunity for public comment on NJDEP's proposed BART determinations for Vineland Municipal Electric Utility and BL England Generating Station was published on August 3, 2011 in the Press of Atlantic City. The public notice, Technical Support Document (TSD), and fact sheet were also posted on the NJDEP Air Quality Permitting Program's website under Public Notices. NJDEP also sent written notification of the proposed BART addendum to USEPA Region 2, and electronic notification to the US Fish and Wildlife Service and the US Forest Service.

During the public comment period, comments were received from the Sierra Club and RC Cape May regarding NJDEP's proposed BART determinations with respect to the coal-fired boilers at BL England. The response to comment document, public notice, and fact sheet are located in Attachments 7 through 9 at the end of this document.

Attachment 11

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

ZINE

LISA P. JACKSON
Commissioner

Air Compliance & Enforcement
Southern Regional Office
2 Riverside Drive, Suite 201
Camden, NJ 08103
Telephone: (856) 614-3601 Fax: (856) 614-3613

CERTIFIED MAIL/RRR
#7005 1160 0004 0982 3004

November 6, 2008

Joseph Isabella, Director, VMEU
VINELAND CITY MUNICIPAL ELECTRIC UTILITY
PO BOX 1508
VINELAND, NJ, 08362-1508

Re: VINELAND MUNICIPAL ELEC UTIL HOWARD M. DOWN/75507
New Jersey Administrative Code 7:27-27
Administrative Consent Order with EA ID #: NEA070001

Dear Mr. Isabella:

Enclosed please find a fully executed copy of the referenced Administrative Consent Order, which contains the agreements reached between VINELAND CITY MUNICIPAL ELECTRIC UTILITY and the Department.

Thank you for your efforts in reaching this amicable agreement. If you have any further questions, please contact Tim P Davis at (856) 614-3601.

Sincerely,

Richelle B. Wormley, Manager
Southern Regional Office
Air Compliance & Enforcement

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

Air Compliance & Enforcement
Southern Regional Office
One Port Center
2 Riverside Drive, Suite 201
Camden, New Jersey 08103
Telephone: (856) 614-3601 Fax: (856) 614-3613

IN THE MATTER OF

ADMINISTRATIVE
CONSENT ORDER

VINELAND MUNICIPAL ELECTRIC UTILITY
PO BOX 1508
VINELAND, NJ 08362-1508

EA ID # NEA070001 - 75507

This Administrative Consent Order (ACO) is entered into pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (Department") by N.J.S.A. 13:1D-1 et seq., and the Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq. (the "Act"), and duly delegated to the Manager, Southern Regional Office of Air Compliance & Enforcement pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. VINELAND MUNICIPAL ELECTRIC UTILITY owns and/or operates the facility known as Vineland Municipal Electric Utility, Howard M. Down Station, at 211 N West Ave Block #420 and Lot #1, City of Vineland, County of Cumberland, New Jersey (ID# 75507). (the "Facility")

2. In an e-mail correspondence from the facility dated April 25, 2007, VINELAND MUNICIPAL ELECTRIC UTILITY indicated that it was intending to be relieved of compliance with the mercury regulations at N.J.A.C. 7:27-27.7 by entering into an enforceable agreement with the Department pursuant to N.J.A.C. 7:27-27.7(e).

3. As the result of this correspondence, dated April 25, 2007, the Department has determined that VINELAND MUNICIPAL ELECTRIC UTILITY will not meet the emission limit specified at N.J.A.C. 7:27-27.7(a) (Coal-fired boilers) which reads as follows:

   Requirement: On and after December 15, 2007, each owner or operator of a coal-fired boiler of any size shall operate the coal-fired boiler in accordance with the provisions

specified in either (a) 1 or 2 below, except as specified in (d), (e), or (k) below. Compliance with this standard shall be measured pursuant to (b) below.

1. The emissions of mercury from any coal-fired boiler shall not exceed 3.00 mg/MW- hr, based on an annual weighted average of all valid stack emission tests performed for four consecutive quarters weighted by megawatt hours produced each quarter; or

2. The reduction efficiency for control of mercury emissions of the air pollution control apparatus for control of mercury of any coal-fired boiler shall be at least 90 percent, based on the annual weighted average of all valid stack emission tests performed for four consecutive quarters weighted by megawatt hours produced each quarter.

4. Instead, VINELAND MUNICIPAL ELECTRIC UTILITY notified the Department of its intentions to met the requirements of N.J.A.C. 7:27-27.7 by complying with section (e), which reads as follows:

> (e) The December 15, 2007 deadline for compliance with the mercury emissions standards specified in (a) above is not applicable to an owner or operator of any coal-fired boiler who has entered into an enforceable agreement by December 15, 2007, with the Department to shut down the coal-fired boiler by December 15, 2012.

5. On December 13, 2007, the VINELAND MUNICIPAL ELECTRIC UTILITY forwarded the Department a signed ACO pursuant to which the VINELAND MUNICIPAL ELECTRIC UTILITY agreed to cease coal-fired operation of the Unit #10 boiler by December 15, 2012.

6. The Department and VINELAND MUNICIPAL ELECTRIC UTILITY jointly agree that coal-fired operation of Unit #10 boiler should cease prior to December 15, 2012 and, as such, jointly agree that the herein ACO shall supercede and replace the previous version.

7. Based on the facts set forth in these FINDINGS, the Department has determined that VINELAND MUNICIPAL ELECTRIC UTILITY will not meet the regulations promulgated at N.J.A.C. 7:27-27.7(a)

8. In order to resolve this matter without trial or adjudication, VINELAND MUNICIPAL ELECTRIC UTILITY has agreed to entry of this ACO and to be bound by its terms and conditions. By entering this ACO, VINELAND MUNICIPAL ELECTRIC UTILITY has agreed to cease all coal-fired operation of the Unit #10 boiler after December 31, 2010.

ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED THAT:

A. HEARING REQUEST

9. VINELAND MUNICIPAL ELECTRIC UTILITY hereby waives its right to an administrative hearing with respect to the matters raised in this ACO.

B. COMPLIANCE SCHEDULE

10. VINELAND MUNICIPAL ELECTRIC UTILITY shall take whatever actions are necessary to achieve and maintain compliance with its permit and N.J.A.C. 7:27-27.7 including but not limited to the following:

    a. Cease coal-fired operation of the Unit #10 boiler after December 31, 2010.

C. PROGRESS REPORTS

11. VINELAND MUNICIPAL ELECTRIC UTILITY shall submit an annual report beginning in calendar year 2009 with a spreadsheet of dates of operation for unit #10 boiler including an indication of the fuels burned on each day. This annual report shall be submitted to the Southern Regional Office by January 30, of the following year.

D. STIPULATED PENALTIES

12. In the event that VINELAND MUNICIPAL ELECTRIC UTILITY does not cease coal-fired operation of the Unit #10 boiler by December 31, 2010 it shall pay stipulated penalties to the Department, as set forth below, for failure to comply with the provisions of this ACO unless the Department has notified VINELAND MUNICIPAL ELECTRIC UTILITY in writing that a stipulated penalty will not be assessed for violations of the compliance schedule pursuant to the force majeure provisions of this ACO.

Per calendar day of coal-fired operation of the Unit #10 boiler after December 15, 2007	$10,000.00

12. Payment(s), if required, shall be made by check payable to Treasurer, State of New Jersey and shall be submitted along with the Enforcement Invoice to:

Department of Treasury
Division of Revenue
P.O. Box 417
Trenton, NJ 08646-0417

13. Within 45 calendar days after VINELAND MUNICIPAL ELECTRIC UTILITY's receipt of a written demand from the Department for stipulated penalties, VINELAND MUNICIPAL ELECTRIC UTILITY shall submit a check to the Department as outlined in paragraph 12 above.

14. If VINELAND MUNICIPAL ELECTRIC UTILITY fails to pay stipulated penalties pursuant to the preceding paragraphs, the Department may take action to collect same, including, but not limited to, instituting civil proceedings to collect such penalties pursuant to R. 4:67 and R. 4:70 or assess civil administrative penalties for violations of this ACO.

15. The payment of stipulated penalties does not alter VINELAND MUNICIPAL ELECTRIC UTILITY's responsibility to complete all requirements of this ACO.

E. FORCE MAJEURE

16. If any event occurs which is beyond the control of VINELAND MUNICIPAL ELECTRIC UTILITY and which VINELAND MUNICIPAL ELECTRIC UTILITY believes will or may cause delay in the achievement of the compliance schedule provisions of this ACO, VINELAND MUNICIPAL ELECTRIC UTILITY shall notify the Department in writing within 7 calendar days of becoming aware of the delay or anticipated delay, as appropriate. In the notification, VINELAND MUNICIPAL ELECTRIC UTILITY shall reference this paragraph, describe the anticipated length of the delay, the precise cause or causes of the delay, and any measures taken or to be taken to minimize the delay. VINELAND MUNICIPAL ELECTRIC UTILITY shall take all necessary action to prevent or minimize any such delay.

17. The Department may adjust the deadlines in the compliance schedule of this ACO for a period no longer than the delay if the Department finds that:

    A. VINELAND MUNICIPAL ELECTRIC UTILITY has complied with the notice requirements of paragraph 16;

    B. any delay or anticipated delay has been or will be caused by fire, flood, riot, strike, or other circumstances beyond the control of VINELAND MUNICIPAL ELECTRIC UTILITY; and

C. VINELAND MUNICIPAL ELECTRIC UTILITY has taken all necessary actions to prevent or minimize the delay.

18. If the Department denies VINELAND MUNICIPAL ELECTRIC UTILITY's force majeure request, VINELAND MUNICIPAL ELECTRIC UTILITY may be subject to stipulated penalties. The burden of proving that any delay is caused by circumstances beyond the control of VINELAND MUNICIPAL ELECTRIC UTILITY and the length of any such delay attributable to those circumstances shall rest with VINELAND MUNICIPAL ELECTRIC UTILITY. Increases in the cost or expenses incurred by VINELAND MUNICIPAL ELECTRIC UTILITY in fulfilling the requirements of this ACO shall not be a basis for an extension of time. Delay in an interim requirement shall not automatically justify or excuse delay in the attainment of subsequent requirements. Contractor's breach shall not automatically constitute force majeure.

F. GENERAL PROVISIONS

19. Nothing contained in this ACO restricts the ability of the Department to raise the above Findings in any other proceeding, specifically including, but not limited to, proceedings pursuant to N.J.S.A. 13:1E-126 et seq., (commonly referred to as A-901).

20. This ACO shall be binding on VINELAND MUNICIPAL ELECTRIC UTILITY, its respective agents, successors, assigns, and any trustee in bankruptcy or receiver appointed pursuant to a proceeding in law or equity.

21. This ACO shall be fully enforceable as a final Administrative Order in the New Jersey Superior Court.

22. VINELAND MUNICIPAL ELECTRIC UTILITY agrees not to contest the terms or conditions of this ACO except that VINELAND MUNICIPAL ELECTRIC UTILITY may contest the Department's interpretation or application of such terms or conditions in any action brought by the Department to enforce this ACO's provisions.

23. This ACO shall not relieve VINELAND MUNICIPAL ELECTRIC UTILITY from obtaining and complying with all applicable federal, state and local permits as well as all applicable statutes, codes, rule, regulations and orders, including but not limited to the statutes and regulations cited herein.

24. No modification or waiver of this ACO shall be valid except by written amendment duly executed by VINELAND MUNICIPAL ELECTRIC UTILITY and the Department or by the Department's written modification pursuant to the force majeure provisions herein.

25. Unless otherwise specifically provided herein, VINELAND MUNICIPAL ELECTRIC UTILITY shall submit all documents required by this ACO, except penalty payments (see

paragraph 12 above), to the Department by certified mail, return receipt requested or by hand delivery with an acknowledgment of receipt form for the Departments signature to:

Richelle B. Wormley, Manager
Air Compliance & Enforcement
Southern Regional Office
One Port Center, 2 Riverside Drive, Suite 201
Camden, NJ 08103

The date the Department receives the certified mail or executes the acknowledgment will be the date the Department uses to determine VINELAND MUNICIPAL ELECTRIC UTILITY's compliance with this ACO.

26. Unless otherwise specifically provided herein, any communication made by the Department to VINELAND MUNICIPAL ELECTRIC UTILITY pursuant to this ACO shall be sent to

VINELAND MUNICIPAL ELECTRIC UTILITY
PO Box 1508
Vineland, NJ 08362-1508

27. VINELAND MUNICIPAL ELECTRIC UTILITY shall not construe any unwritten or informal advice, guidance, suggestions, or comments by the Department, or by persons acting on behalf of the Department, as relieving VINELAND MUNICIPAL ELECTRIC UTILITY of its obligations under its permit(s), this ACO, the Subchapter 27 regulations, and/or the Clean Air Act.

28. In addition to the Department's statutory and regulatory rights to enter and inspect, VINELAND MUNICIPAL ELECTRIC UTILITY shall allow the Department and its authorized representatives access to the site at all times for the purpose of determining compliance with this ACO.

29. Nothing in this ACO shall preclude the Department from taking enforcement action against VINELAND MUNICIPAL ELECTRIC UTILITY for matters not set forth in the findings of this ACO.

30. No obligations or penalties imposed by this ACO are intended to constitute debt(s) which may be limited or discharged in a bankruptcy proceeding. All obligations and penalties are imposed pursuant to the police powers of the State of New Jersey for the enforcement of the law and the protection of public health, safety, welfare and the environment.

31. VINELAND MUNICIPAL ELECTRIC UTILITY shall give written notice of this ACO to any successor in interest thirty (30) calendar days prior to transfer of ownership or control of

the facility or facilities which are the subject of this ACO and shall simultaneously notify the Department that such notice has been given. This requirement shall be in addition to any other statutory or regulatory requirements arising from the transfer of ownership or control of VINELAND MUNICIPAL ELECTRIC UTILITY's facility. In addition, the parties agree that any contract, lease, deed or any other agreement that VINELAND MUNICIPAL ELECTRIC UTILITY enters into to convey the property/facility that is the subject of this ACO shall include a provision which states that the successor, assignee, tenant or purchaser has agreed to assume the obligations imposed by this ACO.

32. The Department reserves all statutory and common law rights to require VINELAND MUNICIPAL ELECTRIC UTILITY to take additional action(s) if the Department determines that such actions are necessary to protect public health, safety, welfare and the environment. Nothing in this ACO shall constitute a waiver of any statutory or common law right of the Department to require such additional measures should the Department determine that such measures are necessary.

33. This ACO shall be governed and interpreted under the laws of the State of New Jersey.

34. If any provision of this ACO is found invalid or unenforceable, the remainder of this ACO shall not be affected thereby and each provision shall be valid and enforced to the fullest extent permitted by law. The Department does, however, retain the right to terminate the remainder of this ACO if, after such finding, it determines that the remaining ACO does not serve the purpose for which it was intended.

35. This ACO represents the entire integrated agreement between the Department and VINELAND MUNICIPAL ELECTRIC UTILITY on the matters contained herein.

36. The Department reserves the right to unilaterally terminate this ACO in the event VINELAND MUNICIPAL ELECTRIC UTILITY violates its terms and to take any additional enforcement action it deems necessary.

37. This ACO shall terminate upon receipt by VINELAND MUNICIPAL ELECTRIC UTILITY of written notice from the Department that all the requirements of this ACO have been satisfied.

38. This ACO shall become effective upon the execution hereof by all parties, subject to completion of any required public participation process.

VINELAND MUNICIPAL ELECTRIC UTILITY

DATED: 10/29/08

BY: Robert Romano

NAME: Robert Romano

TITLE: Mayor

By this signature, I certify that I have full authority to execute this document on behalf of VINELAND MUNICIPAL ELECTRIC UTILITY.

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DATED: 11/6/08

BY: [signature]

NAME: Richelle Burkeen Wamsley

TITLE: Manager AWCtE SRC

By this signature, I certify that I have full authority to execute this document on behalf of NJDEP.

Attachment 2

DEPARTMENT OF JUSTICE

Notice of Lodging of Consent Decree Under the Clean Air Act

Notice is hereby given that on March 31, 2011, a proposed Consent Decree (the "Consent Decree") in *United States* v. *City of Vineland, New Jersey*, Civil Action No. 1:11–cv–1826 was lodged with the United States District Court for the District of New Jersey.

In this action, the United States sought civil penalties and injunctive relief for Defendant City of Vineland, New Jersey's ("the City") violations of the Clean Air Act, 42 U.S.C. 7401 *et seq.*, at the Vineland Municipal Electric Utility's oil- and coal-fired electric generating station ("Facility"). The Consent Decree requires the City to pay a civil penalty of $850,000 to the United States, and to implement remedial measures at the Facility, including permanently retiring two of the Facility's electric generating units, installing pollution controls on or permanently retiring a third unit, and constructing and operating a new natural gas-fired turbine at an estimated cost of approximately $60 million.

The Department of Justice will receive, for a period of thirty (30) days from the date of this publication, comments relating to the Consent Decree. Comments should be addressed to the Assistant Attorney General, Environment and Natural Resources Division, and either e-mailed to *pubcomment-ees.enrd@usdoj.gov* or mailed to P.O. Box 7611, United States Department of Justice, Washington, DC 20044–7611, and should refer to *United States* v. *City of Vineland, New Jersey*, D.J. Ref. 90–5–2–1–09529.

During the public comment period, the Consent Decree may be examined on the following Department of Justice Web site, *http://www.usdoj.gov/enrd/Consent Decrees.html*. A copy of the Consent Decree may also be obtained by mail from the Consent Decree Library, P.O. Box 7611, United States Department of Justice, Washington, DC 20044–7611 or by faxing or e-mailing a request to Tonia Fleetwood (*tonia.fleetwood@usdoj.gov*), fax No. (202) 514–0097, phone confirmation number (202) 514–1547. In requesting a copy from the Consent Decree Library, please enclose a check in the amount of $8.50 (25 cents per page reproduction cost) payable to the U.S. Treasury or, if by e-mail or fax, forward a check in that amount to the Consent Decree Library at the stated address.

Ronald G. Gluck,

Assistant Chief, Environmental Enforcement Section, Environment and Natural Resources Division.

[FR Doc. 2011–8060 Filed 4–5–11; 8:45 am]

BILLING CODE 4410–15–P

DEPARTMENT OF JUSTICE

Notice of Lodging of Settlement Agreement Under the Comprehensive Environmental Response, Compensation, and Liability Act

Notice is hereby given that on March 31, 2011, a proposed Settlement Agreement in *In re Exide Technologies et al.*, No. 02–11125(KJC) (Bankr. D. Del.), was lodged with the United States Bankruptcy Court for the District of Delaware. In this bankruptcy matter the United States, on behalf of the Environmental Protection Agency, sought reimbursement of response costs incurred pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") in connection with 21 Superfund sites, and on behalf of the National Oceanic and Atmospheric Administration the United States sought natural resource damages under CERCLA for two sites. The Settlement Agreement between the United States and the Debtor, Exide Technologies, and certain of its Debtor affiliates, including Exide Illinois, Inc., Exide Delaware, LLC, RBD Liquidation, LLC, Dixie Metals Company, and Refined Metals Corporation, resolves Exide's liability to the United States' for response costs under Section 107(a) of CERCLA, 42 U.S.C. 9607(a), and Exide's liability under Section 6973 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. 6973, for the following 21 sites: (1) Hamburg Lead Superfund Site, Hamburg, PA (03BH); (2) Hamburg Rail Cut Superfund Site, Hamburg, PA (A3H6); (3) Hamburg Port Clinton Avenue Superfund Site, Hamburg, PA (A3J4); (4) (5) Hamburg Peach Alley Parking Lot Superfund Site, Hamburg, PA (A3V1); (6) Kaercher Creek Superfund Site, Hamburg and Windsor Township, PA (A3H8); (7) Hamburg Mill Creek Superfund Site, Hamburg, PA (A3H7); (8) Hamburg Pleasant Hills Trailer Park Superfund Site, Hamburg, PA (A3H2); (9) Hamburg Ambulance Garage Superfund Site, Hamburg, PA (A3H5); Hamburg South Canal Superfund Site, Hamburg, PA (A3J2); (10) Non-Debtor-Owned Portions of the Price Battery Superfund Site, Hamburg, PA (A3E2); (11) Brown's Battery Superfund Site, Tilden Township, PA (03–84); (12) ESB Superfund Site, Atlanta, GA (A4AB); (13) Raleigh Street Dump Superfund Site, Tampa, FL (A4J7); (14) Ross Metals Superfund Site, Rossville, Fayette County, TN (O4RO); (15) Still Meadow Battery Superfund Site, Valrico, FL (O4A2); (16) Magic Marker/Gould Battery Superfund Site, Trenton, NJ; (17) Bowers Battery Superfund Site, New Philadelphia, OH (B5S9); (18) Puente Valley Operable Unit of the San Gabriel Valley Superfund Sites, Area 4,Industry, CA (O98V); (19) Operating Industries Superfund Site, Monterey Park, CA (O958); (20) Hamburg Old Gas Station Superfund Site, Hamburg, PA (A3ER); (21) Hamburg Schappelle Road Superfund Site, Hamburg, PA (A3EG).

The Settlement Agreement also resolves the claims of the United States on behalf of NOAA for natural resource damages under Section 107(a) of CERCLA, 42 U.S.C. 9607(a), for the following two sites: NL Industries, Inc. Superfund Site, Pedricktown, Salem County, NJ; and Custom Distribution Services Site in Perth Amboy, Middlesex County, NJ.

Under the Settlement Agreement, the Debtors have agreed to an allowed, general unsecured claim in the total amount of $67,599,678 to resolve their liability under Sections 106 and 107 of CERCLA and Section 7003 of RCRA at the 21 Liquidated and 2 NRD Sites. The Settlement Agreement also contains provisions pertaining to the treatment of three other categories of sites: Debtor-Owned Sites, Additional Sites, and sites subject to Work Orders and Work Consent Decrees.

The Department of Justice will receive for a period of thirty (30) days from the date of this publication comments relating to the Settlement Agreement. Comments should be addressed to the Acting Assistant Attorney General, Environment and Natural Resources Division, and either e-mailed to *pubcomment-ees.enrd@usdoj.gov* or mailed to P.O. Box 7611, U.S. Department of Justice, Washington, DC 20044–7611, and should refer to In re Exide, D.J. Ref. 90–11–2–07802. Persons may request an opportunity for a public meeting in the affected area in accordance with Section 7003(d) of RCRA, 42 U.S.C. 6973(d).

The Settlement Agreement may be examined at the United States Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20004. During the public comment period, the Settlement Agreement may also be examined on the following Department of Justice Web site, to *http://*

Attachment 3

City of
Vineland
New Jersey

JOSEPH A. ISABELLA
Director of Municipal Utilities
VINELAND MUNICIPAL UTILITIES

640 E. WOOD STREET • P.O. BOX 1508
VINELAND, NEW JERSEY 08362-1508

Telephone: (856) 794-4000 Ext. 4167
Telefax: (856) 794-6197
E-mail: jisabella@vinelandcity.org

June 6, 2011

Mr. Michael J. Kormos
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403-2497

Dear Michael:

The City of Vineland is requesting Generator No. 10 to be retired as of September 1, 2012. The unit net output is 23 MW. The Unit #10 boiler will not meet the new pollution requirements in coming years plus Vineland is under an EPA Consent Decree on past emission violations. In order to continue to operate Generator No. 10, Vineland would have to install SNCR, new controls, perform a steam turbine and generator overhaul with new seals, blades, etc. Plus this decade, new stringent EPA/DEP rules will require more pollution equipment on this small 41 year old boiler.

PJM needs a highest budget cost to bring Generator No. 10 up to full compliance – approximately $10 million.

Once approved, Vineland will perform all needed eSuite requirements.

At this time, Vineland is installing a new generator in PJM Queue as S121 which is 63 MW at same Unit #10 site plus Vineland has a second 63 MW unit in PJM Queue W2-039 in the Vineland area.

Sincerely,

Joseph A. Isabella
Director of Municipal Utilities

cc: Todd Weaver
Harry Maloney

Attachment 4

City of Vineland New Jersey

VINELAND MUNICIPAL ELECTRIC UTILITY
211 N. West Ave • P. O. Box 1508
Vineland, New Jersey 08362-1508

Joseph A. Isabella, Director
Vineland Municipal Utilities
(856) 794-4000 ext. 4166
FAX - (856) 794-6197

July 1, 2011

Mr. Kenneth Eng, Chief
Air Compliance Branch
USEPA Region 2
290 Broadway, 21st Floor
New York, NY 10007-1866

Re: City of Vineland - Vineland Municipal Electric Utility (VMEU)
Information to be provided under the Consent Decree
Civil Action No. 1:11-cv-01826 (RMB-JS) (Consent Decree)
Unit 10 retirement

Dear Mr. Eng:

Paragraph 14 of the above-referenced document requires that by July 1, 2011, if VMEU has decided not to install SNCR on Unit 10, certification be made to EPA and NJDEP regarding the shutdown of Unit 10 by September 1, 2012

Attached please find a certification from Joseph Isabella, Director of Vineland Municipal Utilities, regarding this matter.

If you have any questions about the information contained herein, please contact Lisa Fleming at (856) 794-4000, x4163, or by email at lfleming@vinelandcity.org.

Sincerely,

Lisa A. Fleming
Sr. Environmental Specialist

c: Flaire Mills, Air Branch Chief, USEPA Region 2
NJDEP AQPP
NJDEP BAQP
K. Kinsella

DECOTIIS, FITZPATRICK & COLE, LLP
Glenpointe Centre West
500 Frank W. Burr Boulevard
Teaneck, New Jersey 07666
(201) 928-1100
Attorneys for Defendant,
City of Vineland

UNITED STATES OF AMERICA **Plaintiff**	:	**Civil Action No.** **1:11-cv-1826 (RMB-JS)**
CITY OF VINELAND **Defendant**	:	

I, Joseph A. Isabella, **HEREBY CERTIFY** as follows:

1. I am the Director of Municipal Utilities for the City of Vineland, New Jersey, and I am qualified to make this Certification on behalf of the City of Vineland.

2. This Certification is made in accordance with Paragraph 14.C.ii. of a Consent Decree between the United States of America and the City of Vineland, in the above captioned matter, which requires the City to certify to the United States Environmental Protection Agency and the New Jersey Department of Environmental Protection that Unit 10 at the City's electric generating station, known as the Howard M. Down Station, will permanently cease operation and be retired from service no later than September 1, 2012.

3. On June 6, 2011, I requested that PJM permanently retire Unit 10 from operation effective as of September 1, 2012.

I **FURTHER CERTIFY** that the foregoing information is true. I understand that, if any of the foregoing information is willfully false, I am subject to punishment.

Joseph A. Isabella

Dated: June 30, 2011

Attachment 5

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

LISA P. JACKSON
Acting Commissioner

IN THE MATTER OF

ATLANTIC CITY ELECTRIC COMPANY

CONECTIV, and

PEPCO HOLDINGS, INC.

800 King Street

WILMINGTON, DELAWARE 19801

ADMINISTRATIVE CONSENT ORDER

TABLE OF CONTENTS

The following FINDINGS are made and ADMINISTRATIVE CONSENT ORDER ("ACO") is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection ("NJDEP" or the "Department") by N.J.S.A. 13:1D-1 et seq., the Air Pollution Control Act of 1954, N.J.S.A. 26:2C-1 et seq., and the Spill Compensation and Control Act, 58:10-23.11 et seq., and duly delegated pursuant to N.J.S.A. 13:1B-4 to the Assistant Commissioners for Compliance and Enforcement, Site Remediation and Waste Management, Land Use Management, and Natural & Historic Resources.

FINDINGS

1. The Department is a principal department in the Executive Branch of the State of New Jersey ("State") Government. N.J.S.A. 13:1D-1. It is directed to formulate comprehensive policies for the conservation of the natural resources of the State, the promotion of environmental protection and the prevention of pollution of the environment of the State. N.J.S.A. 13:1D-9. Specifically, the Department is directed to control air pollution in accordance with the provision of any applicable code, rule, or regulation promulgated by the Department for this purpose and has been granted the necessary powers to effect this purpose. N.J.S.A. 26:2C-9b. In addition, with the State being the Trustee, for the benefit of its citizens, of all natural resources within its jurisdiction, the Department is vested with the authority to protect this public trust. N.J.S.A. 58:10-23.11a.

2. Atlantic City Electric Company ("ACEC") owns and operates an electric utility steam generating facility, known as the B.L. England generating station, located in Beesley's Point, Upper Township, County of Cape May, State of New Jersey (ID# 73001). ACEC also owns

a facility in Egg Harbor Township, Atlantic County, New Jersey near Pleasantville, New Jersey ("Pleasantville").

3. The electric utility steam generating units at B.L. England are regulated by the Department pursuant to N.J.S.A. 26:2C-1 et seq., and the Department's rules at N.J.A.C. 7:27-1 et seq.

4. Conectiv Atlantic Generation, L.L.C. ("CAG"), an affiliate of ACEC, owns and operates the Deepwater generating station located in Pennsville, Salem County, New Jersey ("Deepwater").

5. ACEC is a direct wholly-owned subsidiary of Conectiv, and CAG is an indirect wholly-owned subsidiary of Conectiv. Conectiv, in turn, is a direct wholly-owned subsidiary of Pepco Holdings, Inc. (collectively, ACEC, CAG, Conectiv, and Pepco Holdings, Inc. are hereinafter the "Companies").

6. NJDEP alleges that the Companies undertook major modifications at B.L. England, a major emitting facility, in violation of the Air Pollution Control Act ("APCA"), N.J.S.A. 26:2C-1 et seq., and its implementing regulations, N.J.A.C. 7:27-8.1 et seq. and N.J.A.C. 7:27-18.1 et seq., and/or in violation of the Prevention of Significant Deterioration ("PSD") requirements in Part C of Title I of the federal Clean Air Act ("CAA"), 42 U.S.C. §§ 7470-7492, and its implementing regulations, 40 C.F.R. Part 52.21 et seq.

7. NJDEP further alleges that, pursuant to the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11et seq., and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Companies are responsible for groundwater contamination at the Companies' B.L. England,

Deepwater, and Pleasantville Sites.

8. NJDEP and the Companies (collectively, the "Parties") wish to resolve the State's potential civil enforcement actions against the Companies for: (1) physical modifications that the Companies may have undertaken at their B.L. England plant in violation of the APCA and its implementing regulations and/or the federal CAA and its implementing regulations; and 2) Natural Resource Damages for groundwater contamination at the Companies' B.L. England, Deepwater, and Pleasantville Sites. The Parties also wish to address the Companies' responsibilities with regard to the sulfur content of coal at B.L. England Unit 1.

9. The Parties recognize that this ACO has been negotiated in good faith and at arm's length, that the Parties have voluntarily agreed to this ACO, that implementation of this ACO will avoid prolonged and complicated litigation between the Parties, and that this ACO is fair, reasonable, and consistent with the goals of the State's environmental laws, and in the public interest.

THEREFORE, without any admission of fact or law, and without any admission of liability for the violations alleged, the Parties order and agree as follows:

ORDER

I. APPLICABILITY

10. The provisions of this ACO shall apply to and be binding upon NJDEP, upon the Companies and their successors and assigns, and upon the Companies' officers, employees, and agents solely in their capacities as such. The Companies' obligations under this ACO are

independent of, and in addition to, any applicable requirements under federal and state law, including but not limited to those requirements set forth in existing and/or future operating permits issued by NJDEP to the B.L. England facility.

11. If, prior to the fulfillment of the Companies' obligations under this ACO, the Companies propose to sell or transfer any of the assets or operations of B.L. England, then the Companies shall advise the purchaser or transferee in writing of the existence of this ACO thirty (30) days before such sale or transfer and shall simultaneously send a copy of such written notification by certified mail, return receipt requested, to NJDEP and the New Jersey Office of the Attorney General. This requirement shall be in addition to any other statutory or regulatory requirements arising from the transfer of ownership or control of B.L. England.

12. If NJDEP agrees that: (1) the purchaser or transferee of the B.L. England generating station has the financial capability, technical capability, and recent history of compliance to justify a transfer of responsibility for (i) Natural Resource Damages except with respect to the claim for Natural Resource Damages settled in Paragraph 84 of this ACO, and (ii) the obligations applicable to the Unit(s) and/or B.L. England, other than remediation of discharges of Hazardous Substances at the B.L. England Site which is addressed in Paragraph 13 of this ACO; (2) the Companies and the purchaser or transferee have properly allocated any NOx or SO2 Allowances under this ACO that may be associated with the Unit(s) and the purchaser or transferee has agreed to Surrender NOx and SO2 Allowances as provided by this ACO; and (3) the purchaser or transferee has agreed contractually to assume responsibility for items (1)-(2) herein, then NJDEP may, in the exercise of its sole discretion, agree to a modification of this ACO such that the purchaser or transferee shall

be either i) solely responsible, or ii) jointly and severally responsible, for all unfulfilled requirements of items (1) and (2) herein. Notwithstanding any agreement pursuant to which a third party would (as between the Companies and said third party) assume responsibility for items (1) and (2) herein at B.L. England, in the event that the purchaser or transferee fails to fulfill the obligations assumed by agreement with the Companies, then nothing in this paragraph shall relieve the Companies of their responsibility for Natural Resource Damages for resources other than groundwater at B.L. England.

13. The Companies also are responsible for the ongoing remediation of discharges at the B.L. England, Deepwater and Pleasantville Sites. Should the Companies determine to sell or transfer all or part of B.L. England, Deepwater and Pleasantville to a third party, the Companies shall comply with all transfer procedures set forth in the Industrial Site Recovery Act ("ISRA"), N.J.S.A. 13:1K-6 et seq. and its implementing regulations. NJDEP shall approve the application for the remediation agreements upon the complete and accurate submission of the documents required to be submitted pursuant to subsection 13:1K-9(e). Upon approval of the application for remediation agreements by NJDEP, the Companies may transfer responsibility for the ongoing groundwater and soil remediation at the B.L. England, Deepwater and Pleasantville Sites to a purchaser or transferee that has agreed contractually to assume responsibility for such remediation. Notwithstanding any agreement pursuant to which a third party would (as between the Companies and said third party) assume responsibility for environmental remediation at the B.L. England, Deepwater and Pleasantville Sites, in the event that the purchaser or transferee fails to fulfill the obligations assumed by agreement with the Companies, then nothing in this paragraph shall relieve the Companies of their responsibility to complete the ongoing

environmental remediation at these Sites.

14. Notwithstanding anything set forth in paragraphs 12-13 of this ACO or any agreement related to the sale of the Unit(s) and/or B.L. England, the Companies shall remain liable (1) for the obligation under this ACO to pay to NJDEP $674,162 in U.S. funds or property of equivalent ecological value for Natural Resource Damages for groundwater contamination at the B.L. England, Deepwater and Pleasantville Sites, as set forth in paragraph 84; and (2) the obligation under this ACO to perform Projects under Section VI (Other Equitable Relief).

15. To the extent it deems appropriate, NJDEP may, in the exercise of its sole discretion, incorporate the purchaser or transferee's obligations and liabilities under this ACO into the purchaser or transferee's permit(s).

16. Obligations or penalties imposed by this ACO are imposed pursuant to the police powers of the State of New Jersey for the enforcement of law and the protection of public health, safety, welfare and the environment. No obligations imposed by this ACO are intended to constitute a debt, claim, penalty or other civil action that could be limited or discharged in a bankruptcy proceeding. Obligations imposed by this ACO are not subject to the automatic stay of 11 U.S.C. § 362(a), but, instead, fall within the exemption from the automatic stay at 11 U.S.C. § 362(b) (4).

II. DEFINITIONS

17. A "30-Day Rolling Average Emission Rate" shall be determined by calculating the Emission Rate for an Operating Day, and then arithmetically averaging that Emission Rate with the

Emission Rates for the previous twenty-nine (29) Operating Days. A new 30-Day Rolling Average shall be calculated for each new Operating Day.

18. A "24-Hour Emission Rate" shall be determined by dividing the total quantity of pollutant (given in pounds emitted) by the total heat input (given in BTUs) for a 24-hour Operating Day, starting and ending at 12 midnight. This rate shall be determined by using a certified Continuous Emissions Monitoring System ("CEMs"). For any period of time where emissions data is not available, the emissions shall be determined by using the pounds per million BTU of heat input (lb/mmBtu) rate for the nearest hour where approximately the same number of BTUs per hour (i.e., within 10%) were being burned. That emission rate for the nearest hour shall be multiplied by the number of BTUs burned during the period of missing emissions data to derive the approximate emissions for the missing time period.

19. "ACO" means this Administrative Consent Order.

20. "Air Pollution Control Act " or "APCA" means the New Jersey Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., and its implementing regulations.

21. "B.L. England" means the electric generating plant, owned and operated by the Companies and located in Beesley's Point, Upper Township, Cape May County, New Jersey, which includes one Babcock & Wilcox coal-fired cyclone boiler with a maximum rated heat input capacity of 1300 mmBtu/Hr and a maximum rating of 129 MW ("Unit 1"); one Babcock & Wilcox coal-fired cyclone boiler with a maximum rated heat input capacity of 1600 mmBtu/Hr and a maximum rating of 160 MW ("Unit 2"); one Combustion Engineering oil-fired tangential boiler with a maximum rated heat input capacity of 1720 mmBtu/Hr and a

maximum rating of 160 MW ("Unit 3"); four 2 MW diesel units; all of which are located on the B.L. England Property; and for purposes of NJDEP's right of first refusal in Paragraph 81(c) only, (i) the B.L. England Property, (ii) Block 479, Lot 74 and that portion of Lot 76 not included in the B.L. England Property, and (iii) if a Third Party Agreement as provided in Paragraph 81(c) also provides for the sale of Block 479, Lots 94.01, 97, 98 and 99, then Block 479, Lots 94.01, 97, 98 and 99 shall be considered B.L. England.

22. "B.L. England Property" means the real property located at 900 North Shore Road, Beesley's Point, Upper Township, Cape May County, New Jersey 08223, designated on the tax map for Upper Township as Block 479, Lot 76.01 and part of Lot 76, to the extent within the boundary drawn on the ALTA/ACSM Land Title Survey dated October 25, 1999 attached hereto as Exhibit A and subject to easement rights to be retained by the Companies for transmission lines, distribution lines, communications facilities, rail lines and substations.

23. "B.L. England Site" means the real property located at 900 North Shore Road, Beesley's Point, Upper Township, Cape May County, New Jersey 08223, designated on the tax map for Upper Township as Block 479, Lots 74, 76, 76.01, 94.01, 97, 98, 99, and Block 661, Lot 81.

24. "BPU means the New Jersey Board of Public Utilities or any successor agency

25. "CAA" or the "Clean Air Act" means the Federal Clean Air Act, 42 U.S.C. § 7401 et seq. and its implementing regulations.

26. "CAFRA" means the Coastal Area Facility Review Act, N.J.S.A. 13:19-1 et seq., and its implementing regulations.

27. "Cardiff substation" means the substation in Egg Harbor Township in Atlantic County.

28. "Cedar substation" means the substation in Stafford Township in Ocean County.

29. "CEMS" or "Continuous Emission Monitoring System," for obligations involving NOx and SO_2 under this ACO, means "CEMS" as defined in 40 C.F.R. Part 72.2 and installed and maintained as required by 40 C.F.R. Part 75.

30. "COC Project" means the modification of the Cardiff and Oyster Creek substations and expansion of the Cedar substation and the upgrade of the 53 mile transmission line that extends from a) the Cardiff substation in Egg Harbor Township, Atlantic County, b) across the southeastern part of Burlington County, c) through the Cedar substation in Stafford Township, Ocean County, and d) terminates at the Oyster Creek substation in Lacey Township, Ocean County.

31. "Compensate Electrically" means the electric system requirements necessary to fulfill the duty set forth in N.J.A.C. 14:3-3.1 to furnish safe, adequate, and proper service.

32. "Conserve" means to preserve natural resources after B.L. England is Shut Down and Dismantled.

33. "Current Auction Process" means the Companies' efforts to sell B.L. England as described in the June 15, 2005 [Confidential] Offering Memorandum for the Proposed Sale of Certain Atlantic City Electric Company Fossil Generating Assets, prepared for the Companies by Concentric Energy Advisors.

34. "Deepwater" means the electric generating plant, owned and operated by the Companies and

located in Pennsville, Salem County, New Jersey.

35. "Deepwater Site" means the real property at 373 North Broadway, Pennsville, Salem County, New Jersey 08070, designated on the tax map for Pennsville as Block 202, Lot 2, Block 203, Lot 8, and Block 301, Lots 6, 8, 12, 13, 13.01, 15, and 15.01.

36. "Dennis substation" means a new substation that the Companies must construct in Dennis Township, Cape May County, New Jersey in order to Compensate Electrically for the Shut Down of B.L. England and/or to otherwise fulfill the duties set forth at N.J.A.C. 14:3-3.1 to furnish safe, adequate, and proper service.

37. "Dismantle" and "Dismantling" mean removal of all aboveground structures, to the structure's slab or foundation. If there is no discharge of Hazardous Substances from subsurface structures, "Dismantle" also means in-place abandonment of these subsurface structures, using fill as necessary to stabilize voids and spaces, consistent with BPU decisions and orders regarding cost recovery. If there is a discharge of Hazardous Substances from subsurface structures, what constitutes "Dismantling" of these subsurface structures will be determined on a case-by-case basis by the NJDEP Site Remediation Program.

38. "Emission Rate" means the number of pounds of pollutant emitted per million Btu of heat input ("lb/mmBtu") or pounds of pollutant emitted per hour ("lb/hr").

39. "EPA" means the United States Environmental Protection Agency.

40. "FWW Permits" means the Freshwater Wetlands Permit and Special Activity Transition Area Waiver for the 69kV and 230kV power line upgrades of the Cedar substation-to-Oyster Creek

substation portion of the COC Project.

41. "Hazardous Substances" means hazardous substances as defined by the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11b(k).

42. "Industrial Site Recovery Act" or "ISRA" means the New Jersey Industrial Site Recovery Act, N.J.S.A. 13:1K-6 et seq. and its implementing regulations.

43. "January 30, 2004 B.L. England coal reauthorization" means the Permit/Certificate to allow combustion of coal with a mean sulfur content of up to 1.70% (12-month rolling average) and up to 1.90% (monthly) in Unit 1 of B.L. England Generating Station dated January 30, 2004.

44. "lb/mmBtu" means pounds per million British Thermal Units of heat input, based upon higher heating value.

45. "May 29, 2003 B.L. England coal reauthorization" means the letter authorization from William O'Sullivan, P.E., Director, Division of Air Quality, NJDEP regarding coal combustion in Unit 1 of B.L. England Generating Station dated May 29, 2003.

46. "MW" means a megawatt, or one million Watts.

47. "Natural Resources" means all land, fish, shellfish, wildlife, biota, air, waters and other such resources owned, managed, held in trust, or otherwise controlled by the State.

48. "Natural Resource Damages" means any and all claims for lost value of, injury to, or destruction of, ground water, or for the restoration to compensate the citizens of New Jersey for the injuries to ground water, arising from discharges of Hazardous Substances

that occurred at the B.L. England, Deepwater and Pleasantville Sites prior to the Effective Date of this ACO. Natural Resource Damages include all claims for assessments, attorney's fees, consultant's or expert fees, interest, or any other expenses or compensation, injunctive relief, and administrative remedies, recoverable as Natural Resource Damages for injuries to ground water under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§ 9601 et seq., the Oil Pollution Act, 33 U.S.C. §§ 2701 et seq., the Clean Water Act, 33 U.S.C. §§ 1251 et seq., the Spill Compensation and Control Act, the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., or any other state or federal common law, statute, or regulation. However, Natural Resource Damages shall not include:

(i) any damages as a result of injuries to any natural resource other than ground water,

(ii) compliance, during remediation of a discharge, with any statutory or regulatory requirement that is not within this definition of Natural Resource Damages, for example, without limitation, the mitigation of freshwater wetlands as required by N.J.A.C. 7:7A, or

(iii) the restoration or other compensation for injury to any natural resource, including ground water, caused after the Effective Date of this Administrative Consent Order, by implementation of any remedial action, including a compensatory restoration remedial action, at any of the Sites.

49. "Natural Resource Injuries" or "Injured Natural Resources" means any adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from contamination, and includes, without limitation, the damage to, or the loss, destruction, or impairment of, a Natural Resource or a Natural Resource Service.

50. "Natural Resource Services" means all ecological and human services, processes, and functions that natural resources provide as a result of their location, quantity, and their physical, chemical and biological quality. Ecological services include the physical, chemical, and biological processes, functions, and services that one Natural Resource provides for another Natural Resource. Human services include the processes and functions of Natural Resources that provide economic, social, ecological, or other value to the present and future citizens of New Jersey.

51. "NJDEP" means the New Jersey Department of Environmental Protection.

52. "NOx" means oxides of nitrogen, as measured in accordance with the provisions of this ACO.

53. "NOx Allowance" means a tradeable unit which represents a limited authorization by the State or EPA under an air pollution control program, including the Clean Air Interstate Rule, to emit up to one ton of NOx during a control period.

54. "Operating Day" for a Unit means any calendar day on which the Unit fires coal.

55. "Oyster Creek substation" means the substation in Lacey Township in Ocean County.

56. "Peak reliability periods" for operation of B.L. England Unit 1 are defined as those times between June 1 and September 30 for the years 2008 through 2012, respectively, during which the PJM Interconnection, LLC schedules B.L. England Unit 1 to be operated for electric system reliability purposes.

57. "Performance Standards" means a) a 30-day rolling average emission rate of no greater than 0.150 lbs/mmBtu and no greater than 0.250 lbs/mmBtu based on a 24-hour emission rate for

SO2; b) a 30-day rolling average emission rate of no greater than 0.130 lbs/mmBtu and no greater than 0.150 lb/mmBtu based on a 24-hour emission rate for NOx; and c) a 30-day rolling average emission rate of no greater than 0.030 lbs/mmBtu for total particulate matter.

58. "Pleasantville" means the facility owned and operated by the Companies and located near Pleasantville in Egg Harbor Township, Atlantic County.

59. "Pleasantville Site" means the real property at 2542 Fire Road, Egg Harbor Township, Atlantic County, New Jersey 08234 , designated on the tax map for Egg Harbor Township as Block 801, Lot 4.

60. "PM" means total particulate matter, as measured in accordance with the provisions of this ACO.

61. "PM Emission Rate" means the average number of pounds of PM emitted per million Btu of heat input ("lb/mmBtu"), as measured in annual stack tests in accordance with New Jersey Air Test Method 1, "Sampling and Analytical Procedures for Determining Emissions of Particles from Manufacturing Processes and from Combustion of Fuels," N.J.A.C. 7:27B-1 et seq.

62. "Pollution control project" or "PCP" shall have the same meaning as the phrase "pollution control project" in 40 C.F.R. § 52.21.

63. "Project Dollars" means the Companies' expenditures and payments incurred or made in carrying out the projects identified in Section VI--Other Equitable Relief -- to the extent that such expenditures or payments both: (a) comply with the Project Dollar and other

requirements set forth in Section VI - Other Equitable Relief - for such expenditures and payments; and (b) constitute the Companies' documented external costs for contractors, vendors, as well as equipment, and its internal costs consisting of employee time, travel, and other out-of-pocket expenses specifically attributable to these particular Projects.

64. "Repower" means the replacement of an existing coal-fired boiler with a new heat source (e.g. natural gas or distillate oil), or new coal-combustion technology (e.g. circulating fluidized bed boilers or integrated gasification combined-cycle ("IGCC") technology).

65. "Required Regulatory Approval" is an approval, permit, or authorization without which B.L. England may not be Shut Down, and consists of approvals, permits or authorizations from the following: the Army Corps of Engineers, the New Jersey Board of Public Utilities ("BPU"), NJDEP, the Pinelands Commission, state and local approvals necessary for transmission line crossings over state highway or county roads together with any foundations constructed in the course of building such crossings, and approvals of local and county agencies necessary for construction of the Dennis substation. With regard to BPU, "Required Regulatory Approval" consists only of those approvals, permits, or authorizations necessary to construct the Dennis substation. With regard to the Pinelands Commission, "Required Regulatory Approval" consists only of those approvals, permits, or authorizations necessary to modify and/or construct transmission lines and/or substations within the State Pinelands Management Area and, as necessary, the Pinelands National Reserve. With regard to state and local approvals necessary for road crossings of transmission lines and any foundations constructed in the course of building such crossings, "Required Regulatory Approval" consists only of those approvals, permits, or authorizations necessary to modify and/or construct transmission lines,

without which B.L. England may not be Shut Down, across state highways, including the Garden State Parkway, or across county roads, plus those approvals, permits or authorizations necessary to construct foundations for any of the foregoing state highway or county road crossings.

66. "Restoration" means any remedial action, or combination of remedial actions, to restore, rehabilitate, replace, or acquire the equivalent of Injured Natural Resources and Natural Resource Services. Restoration includes: primary restoration, which is a remedial action, or combination of remedial actions, including natural recovery, that seeks to return an Injured Natural Resource or Natural Resource Service to its pre-discharge quality, quantity, function, and value; and compensatory restoration, which is a remedial action, or combination of remedial actions, but not including natural recovery, that compensates the present and future citizens of New Jersey for injuries to their Natural Resource.

67. "Ship Bottom substation" means the substation in the City of Ship Bottom in Ocean County, New Jersey.

68. "Shut Down" means permanently cease operation of.

69. "SO_2" means sulfur dioxide, as measured in accordance with this ACO.

70. "SO_2 Allowance" means "Allowance" as defined at 42 U.S.C. § 7651a(3): an authorization, allocated to an affected Unit by the Administrator of EPA under the CAA Subchapter IV-A Acid Deposition Control, to emit, during or after a specified calendar year, up to one ton of sulfur dioxide.

71. "Surrender of Allowances" means permanently surrendering NOx and SO2 Allowances such that these Allowances can never be used to meet any compliance requirement under the CAA, the APCA and its implementing regulations, the New Jersey State Implementation Plan ("SIP"), or any other federal or NJDEP program now existing or subsequently enacted.

72. "Third Party Agreement" shall refer to an agreement to sell B.L. England or the B.L. England Property to a person or entity other than NJDEP or a charitable conservancy, which agreement includes as a condition a right of first refusal in favor of NJDEP for the B.L. England Property as set forth in Section VII (Land Dedication) of this ACO.

73. "Title V Permit" means the permit required of B.L. England under Subchapter V of the CAA, 42 U.S.C. §§7661-7661e and N.J.A.C. 7:27-22 that the Department issued on December 30, 2005.

74. "True-Up" means 1) the permanent withdrawal of SO2 Allowances from an SO2 Allowance account to satisfy the compliance requirements of the Clean Air Act, including the Acid Rain program, 40 C.F.R. Parts 72 and 73, and the Clean Air Interstate Rule, any federal or state rules implementing the Clean Air Interstate Rule, and any other provisions of the Clean Air Act pertaining to SO2 Allowances; and 2) the permanent withdrawal of NOx Allowances from a NOx Allowance account to satisfy the end of season reconciliation requirements of the NOx Budget Trading program and the Clean Air Interstate Rule, any federal or state rules implementing the Clean Air Interstate Rule, and any other provisions of the Clean Air Act pertaining to NOx Allowances.

75. "Unit" means any part of B.L. England that emits or would have the potential to emit any

regulated New Source Review pollutant, as defined in 40 C.F.R. Part 52, consistent with the definition of "emissions unit" in 40 C.F.R. § 52.21.

76. "Watts" means amperes times volts.

III. SHUT DOWN OR REPOWERING OF FACILITY

77. Contingent upon the Companies receiving all Required Regulatory Approvals necessary for the construction of substation and transmission facilities to Compensate Electrically for the Shut Down of B.L. England, and provided that these substations and transmission facilities are in service, the Companies shall completely Shut Down B.L. England by December 15, 2007.

78. The Companies shall work expeditiously towards obtaining all Required Regulatory Approvals and constructing and putting into service the substation and transmission facilities that are needed to Compensate Electrically for the Shut Down of B.L. England.

79. NJDEP agrees to make an expeditious determination on all administratively complete applications for NJDEP permits necessary for the construction, expansion and operation of substation and transmission facilities needed to Compensate Electrically for the Shut Down of B.L. England. NJDEP agrees to conduct its review in parallel with other reviewing authorities.

80. Except as provided in this Paragraph 80, at no time prior to December 15, 2007 may the Companies undertake at B.L. England a physical or operational change that would require a permit under subchapter 18 of the New Jersey Administrative Code, N.J.A.C. 7:27-18.1 et

seq., or the Prevention of Significant Deterioration provisions of the Clean Air Act, 42 U.S.C. §§ 7470-7492, or the New Source Performance Standards of the Clean Air Act, 42 U.S.C. § 7411, and EPA's implementing regulations, as delineated in WEPCo v. Reilly, 893 F.2d 901 (7th Cir. 1990). Notwithstanding the foregoing, the Companies may make physical or operational change(s) at B.L. England in order to meet the requirements of this ACO, including any work necessary to Shut Down B.L. England or to facilitate the construction of substation and transmission facilities to Compensate Electrically for the Shut Down of B.L. England, as well as to satisfy the provisions of Section IV (Groundwater: Cleanup and Natural Resource Damages) and Section XII (Stipulations and Preservation of Rights). As necessary, the Companies shall apply for any APCA and CAA permits required for the physical or operational changes contemplated by this paragraph. In addition, if the Companies need an APCA and/or CAA permit to operate an emergency generator and its associated fuel storage tank to support a communications tower at B.L. England, the Companies shall apply for any such necessary APCA and CAA permits. The Department agrees to make an expeditious determination on all administratively complete permit applications submitted pursuant to this paragraph.

81. The Companies represent that their decision to Shut Down B.L. England is irrevocable and cannot be reversed or changed by the Companies for any reason, including economics, except for 1) a State or Federal mandate to continue operations, or 2) a failure--through no fault of their own--to obtain all Required Regulatory Approvals to construct, expand, and operate substation and transmission facilities needed to Compensate Electrically for the Shut Down of B.L. England. Notwithstanding the foregoing, the Companies may sell or transfer the assets or operations of B.L. England in accordance with Section I (Applicability) of this ACO to a

third party that (1) agrees to satisfy all the requirements under this ACO that are applicable to B.L. England, including the Performance Standards set forth in Section XII (Stipulations and Preservation of Rights), (2) agrees to Repower B.L. England, or (3) agrees to Shut Down B.L. England and use B.L. England for some purpose other than the generation of electricity. If such third party meets the Performance Standards set forth in Section XII (Stipulations and Preservation of Rights) or Repowers as required by this ACO, there shall be no obligation on the part of such third party to Shut Down B.L. England, irrespective of the status of any Required Regulatory Approvals relating to Shut Down by the Companies. A Repowered Unit shall incorporate advances in the art of air pollution control (state-of-the-art technology) that NJDEP and/or EPA determines appropriate under applicable laws and regulations, including N.J.S.A. 26:2C-9.2(c).

82. Any purchaser or transferee of the Companies' interest in B.L. England shall advise NJDEP by December 15, 2007 of any election to Repower B.L. England, and shall Repower B.L. England by December 15, 2011. If there is an election to Repower B.L. England, NJDEP prefers the use of IGCC technology and agrees to make an expeditious determination on all administratively complete applications for NJDEP permits necessary for the construction and operation of a plant using IGCC technology.

83. Consistent with BPU decisions regarding cost recovery and otherwise, the Companies shall complete all Dismantling of B.L. England within a reasonable time--as described by the Companies in reports required by Section XX (Progress Reports) of this ACO–following Shut Down. The Companies shall remediate the B.L. England Site pursuant to applicable laws and regulations. The Companies shall not be required to Dismantle the wastewater treatment

plant, rail line, sanitary facilities, and other facilities useful for remediation and/or monitoring until NJDEP issues a No Further Action letter for the remediated portion of the B.L. England Site. Nothing in this paragraph shall be construed to require the dismantling of, or prohibit the construction of, substations, transmission lines, communication facilities, distribution structures, rail lines, roads, or other facilities necessary to enable the Companies to provide safe, adequate, and proper service.

IV. GROUNDWATER: CLEAN UP AND NATURAL RESOURCE DAMAGES

84. In resolution of NJDEP's Natural Resource Damages claims for groundwater contamination arising from discharges of Hazardous Substances prior to the effective date of this ACO at the B.L. England, Deepwater, and Pleasantville Sites, the Companies shall 1) within 45 days of the effective date of this ACO make a one-time payment to NJDEP of $674,162 in U.S. funds or property of equivalent ecological value, and 2) remediate the groundwater contamination at these facilities pursuant to applicable statutory and regulatory standards.

85. When the Companies submit documentation in accordance with the New Jersey Technical Regulations for Site Remediation, N.J.A.C. 7:26E, demonstrating to NJDEP's satisfaction that the Companies have achieved "applicable statutory and regulatory standards" for groundwater remediation, as well as all other applicable remediation standards, and have otherwise met the requirements for No Further Action letters in N.J.A.C. 7:26C-2.6 at each of these sites, NJDEP will expeditiously issue No Further Action letters concerning groundwater contamination for that site.

86. This Section IV (Groundwater: Clean Up and Natural Resource Damages) is expressly limited to clean up of groundwater contamination and resolution of Natural Resource Damages for groundwater contamination at the B.L. England, Deepwater and Pleasantville Sites. Nothing herein resolves any Natural Resource Damages that may be brought against the Companies for damages to, or loss of, Natural Resources other than groundwater. Similarly, nothing herein addresses the Companies' obligations under State or federal law to restore Natural Resources other than groundwater.

87. The Companies agree that the Natural Resource Damages settlement values for the B.L. England, Deepwater, and Pleasantville Sites reflected in this ACO are premised on current and future compliance with all lawfully imposed requirements for remediation that are protective of human health and the environment at these sites. The Companies' failure to comply with these remediation requirements may give rise to additional Natural Resource Damages to the extent that the noncompliance either creates or increases the scope or duration of any Natural Resource Injuries. The Department expressly reserves its right to pursue the Companies for any Natural Resources Injuries, including ground water, that are exacerbated by such noncompliance. For purposes of this paragraph, the current scope of Natural Resource Injuries is set forth in the initial Natural Resource Damages Assessment of Groundwater Contamination, the schedule of which is attached to the Parties' April 26, 2004 letter agreement.

V. CIVIL PENALTY

88. Based on the FINDINGS and in resolution of the Companies' alleged violations at B.L. England of (i) the APCA permit provisions, N.J.S.A. 26:2C-1 et seq., and its implementing

regulations, N.J.A.C. 7:27-8.1 et seq. and N.J.A.C. 7:27-18.1 et seq.; and/or (ii) the Prevention of Significant Deterioration provisions of the CAA, 42 U.S.C. §§ 7470-7492, and their implementing regulations, 40 C.F.R. §52.21 et seq., the Companies paid a penalty of $750,000 to NJDEP on June 1, 2004. The check was made payable to the "Treasurer, NJDEP of New Jersey," and remitted with the associated invoice to the Department of Treasury, Division of Revenue, P.O. Box 417, Trenton, NJ 08625-0417.

89. Compliance with the terms of this ACO and payment of the $750,000 penalty described in Paragraph 88 shall satisfy any and all civil penalties associated with the Companies' alleged violations of 1) the APCA, N.J.S.A.26:2C-1 et seq. and its implementing regulations, N.J.A.C. 7:27-8.1 et seq. and N.J.A.C. 7:27-18.1 et seq., that may have arisen from any physical or operational changes that the Companies may have undertaken at B.L. England prior to the effective date of this ACO; and 2) any claims that NJDEP could bring against the Companies under the Citizen Suit provisions of the federal CAA for alleged violations of the PSD provisions, 42 U.S.C. §§ 7470-7492 , and their implementing regulations, 40 C.F.R. §52.21 et seq., arising from any physical or operational changes that the Companies may have undertaken at B.L. England prior to the effective date of this ACO.

VI. OTHER EQUITABLE RELIEF

90. In addition to paying the civil penalty as required above in Section V (Civil Penalty) of this ACO, the Companies shall undertake projects to benefit the environment ("Projects") valued at $2 million (plus or minus $50,000). As an example, the Companies may fulfill this responsibility to undertake $2 million in Projects by Conserving or donating all or part of the B.L. England Property to protect the B.L. England Property from sprawl, vehicular

traffic, and the siting of other sources of air pollution. Such Conservation or donation shall not relieve the Companies of their obligations a) under State or federal law, b) under Section IV of this ACO ("Groundwater: Clean Up and Natural Resource Damages") and c) to remediate contamination at the B.L. England Site. Any Conservation or donation of B.L. England Property shall be subject to the requirements of the BPU to obtain approval for the sale or transfer of assets. Within one year of the effective date of this ACO, the Companies shall submit Project proposals outlining how they will spend all Project Dollars or communicate in writing to NJDEP whether they will fulfill their responsibilities under this section by Conserving or donating a portion of the B.L. England Property of equivalent value. The Companies shall maintain for review by NJDEP, upon request, all documents identifying Project Dollars spent by the Companies. All plans and reports prepared by the Companies or by other persons pursuant to the requirements of this section of the ACO shall be publicly available from the Companies, without charge, for two years after the approval or disapproval of the Project(s).

91. All Project proposals must be approved by NJDEP, which approval NJDEP will not unreasonably withhold. In determining whether to approve or disapprove any Project, NJDEP will consider whether the Project secures as much environmental and/or health benefit as possible for Project Dollars expended. Similarly, in carrying out the Projects, the Companies shall use good faith efforts to secure as much environmental and/or health benefit as possible for the Project Dollars expended. Compliance with an approved Project proposal shall constitute such good faith efforts. NJDEP will approve or disapprove administratively complete Project proposals within 90 days of receipt. If NJDEP either does not approve of any of the Projects or wishes the Companies to modify any of them, the Companies shall,

within 90 days of such disapproval or request to modify, respond by modifying their proposals or submitting new Project proposal(s). This process of submittal by the Companies and determination by NJDEP shall continue in 90 day intervals until Projects valued at $2 million (plus or minus $50,000) are approved by NJDEP.

92. The Companies shall certify, as part of each Project proposal, that as of the date of the submittal of the proposal, they were unaware of any person or entity that was required by law to perform the Project described in the proposal. This requirement to certify that no other person or entity is required by law to perform the Project shall not apply in the event that the Companies make a commitment to Conserve or donate all or part of the B.L. England Property to protect it from sprawl, vehicular traffic, and the siting of other sources of air pollution. Within 60 days following the completion of each approved Project, the Companies shall submit to NJDEP a report that documents the date that the Project was completed, the results of implementing the Project, including the emission reductions or other environmental benefits achieved, and the Project Dollars contributed for the implementation of the project. If NJDEP deems the Project to be complete, the Companies' satisfactory completion of this report shall fulfill all of the Companies' responsibilities regarding the completion of that Project and all reporting requirements of this ACO regarding that Project.

93. If the Companies elect to undertake a Project by contributing funds to another person or instrumentality that will carry out the Project, that person or instrumentality must identify in writing: (a) its legal authority for accepting such funding; and (b) its legal authority to conduct the Project for which the Companies contribute the funds. Regardless of whether the Companies elect to undertake a Project by themselves or to do so by contributing funds to

another person or instrumentality that will carry out the Project, the Companies acknowledge that they will receive credit for the expenditure of such funds as Project Dollars only if the Companies demonstrate that the funds have actually been contributed to such person or instrumentality and that such contributions met all requirements of this section of this ACO.

VII. LAND DEDICATION

94. In accordance with Section VI ("Other Equitable Relief") of this ACO, and subject to the requirements of the BPU to obtain approval for the sale or transfer of assets, the Companies may Conserve or donate all or part of the B.L. England Property, as defined herein, to protect the B. L. England Property from sprawl, vehicular traffic, and the siting of other sources of air pollution. For any portion of the B.L. England Property not Conserved or donated to the State, the Companies, subject to the requirements of the BPU to obtain approval for the sale or transfer of assets, shall give NJDEP and/or a charitable conservancy (as defined in N.J.S.A. 13:8B-2(a)) a "right of first offer," i.e., the opportunity to purchase such portion before the B.L. England Property is marketed to any other entity or person (except in the context of the Current Auction Process as described in b) and c) below), and shall give NJDEP a "right of first refusal," i.e. retention of a right to purchase such portion of the B.L. England Property for a limited period (except in the context of the Current Auction Process as described in b) below), as follows:

a. The Companies Shut Down and Dismantle B.L. England: If the Companies Shut Down and Dismantle B.L. England, the Companies shall give NJDEP and/or a charitable conservancy an opportunity for six (6) months from the completion of the Dismantling of B.L. England to negotiate an agreement for the purchase of the B.L.

England Property. If the Companies and NJDEP or a charitable conservancy are not able to reach agreement during this six (6) month period, the Companies thereafter may seek bids from other persons or entities. If as a result of such bids, one or more of the Companies enter into a Third Party Agreement (which agreement shall incorporate as a condition NJDEP's right of first refusal as set forth in this Paragraph 94(a)), then NJDEP shall have forty-five (45) days from the date it receives written notice that the Companies have entered into such Third Party Agreement to execute an agreement with the relevant Companies to purchase the B.L. England Property at the price set forth in such Third Party Agreement and on terms and conditions no less favorable to the Companies than those contained in such Third Party Agreement, including the assumption of any environmental liabilities in such Third Party Agreement. If NJDEP does not execute such an agreement to purchase the B.L. England Property within the forty-five (45) day time period set forth herein, NJDEP's and any charitable conservancy's right of first offer and NJDEP's right of first refusal are extinguished.

b. The Companies Sell B.L. England Through the Current Auction Process to an Entity Committing Either to Repower B.L. England or to Satisfy the Performances Standards in Accordance with this ACO: If as a result of the Current Auction Process one or more of the Companies enter into an agreement for the purchase of B.L. England with a person or entity that commits either to Repower B.L. England or to satisfy the Performance Standards set forth in Section XII (Stipulations and Preservation of Rights) in accordance with this ACO, then neither NJDEP nor any other person or entity shall have any right of first offer or right of first refusal with respect to B.L. England.

c. The Companies Sell B.L. England Through Current Auction Process to an Entity Not Committing Either to Repower B.L. England or to Satisfy the Performance Standards in Accordance with this ACO: If as a result of the Current Auction Process one or more of the Companies enter into a Third Party Agreement (which agreement shall incorporate as a condition NJDEP's right of first refusal as set forth in this Paragraph 94(c)) with a person or entity that does not commit to either Repower B.L. England or to satisfy the Performance Standards set forth in Section XII (Stipulations and Preservation of Rights) in accordance with this ACO, then NJDEP shall have forty-five (45) days from the date it receives written notice that the Companies have entered into such Third Party Agreement to execute an agreement with the relevant Companies to purchase B.L. England at the price set forth in such Third Party Agreement and on terms and conditions no less favorable to the Companies than those contained in such Third Party Agreement, including the assumption of any environmental liabilities in such Third Party Agreement. If NJDEP does not execute such an agreement to purchase B.L. England within the forty-five (45) day time period set forth herein, NJDEP's right of first refusal is extinguished.

VIII. CLEAN WATER ACT SECTION 316(b)

95. Current EPA regulations implementing Section 316(b) of the Clean Water Act (CWA") were published in final form on Friday, July 9, 2004, 69 Fed. Reg. 41576 and are codified at 40 C.F.R. Parts 9, 122, et seq. These new regulations apply to B.L. England.

96. NJDEP issued a final NJPDES renewal permit (NJ005444) for B.L. England on February 4, 2005. In accordance with the schedule in this permit, the Companies shall submit all required

studies necessary to meet federal Section 316(b) requirements or any other requirements of the NJPDES permit.

97. The Parties recognize that New Jersey is unable to waive federal Section 316(b) requirements. However, if B.L. England operations do in fact cease by December 15, 2007, Section 316(b) requirements will no longer be applicable because intake of cooling water in excess of 50 million gallons per day will no longer occur as of the date of plant Shut Down. If the Companies are unable to Shut Down B.L. England by December 15, 2007 in accordance with paragraph 77 of this ACO because of 1) a failure--beyond the Companies' control--to obtain all Required Regulatory Approvals, or 2) a State or federal mandate to continue operating B.L. England, NJDEP will, within the limits of its delegated authority to implement the CWA and consistent with the Parties' April 26, 2004 letter agreement, consider an application from the Companies for a major or minor permit modification to extend the schedule of Section 316(b) requirements articulated in the above-referenced NJPDES renewal permit until December 31, 2010 . If B.L. England does not Shut Down by December 15, 2007 and no permit modification is granted, the Companies will be required to adhere to any Section 316(b) requirements articulated in the above-referenced NJPDES renewal permit except as NJDEP may otherwise determine within the limits of its delegated authority and discretion to implement the CWA.

IX. B.L. ENGLAND COAL REAUTHORIZATION

98. B.L. England shall combust coal at Unit 1 with a sulfur content of not greater than 1.90% (monthly) and 1.70% (12-month rolling average) in accordance with the terms set forth in the May 29, 2003 B. L England coal reauthorization and January 30, 2004 B.L. England coal

reauthorization as amended by this Section IX. Combustion of coal in compliance with the terms set forth in these two coal reauthorizations, as extended by NJDEP, and as amended by this Section IX shall be deemed to satisfy all future Unit 1 coal sulfur content standards under N.J.A.C. 7:27-10.2 until a) Unit 1 is Shut Down, or b) December 15, 2012, whichever date is sooner. NJDEP shall not require new short-term SO2 emission limits for Unit 1 or strategies for developing such limits prior to December 15, 2012, and the Companies are hereby relieved of the provisions of Attachment 1, Sections IV.B.1 (last paragraph only) and IX.D, of the January 30, 2004 B.L. England coal reauthorization regarding short-term SO2 emission limits and compilation of short-term SO2 emissions data. The SO2 emission limits of 7,182 lbs/hr and 1852 parts per million on a dry volume basis corrected to 7% oxygen remain unchanged and the Expiration Date of the May 29, 2003 B.L. England coal reauthorization and January 30, 2004 B.L. England coal reauthorization shall be extended until a) Unit 1 is Shut Down, or b) December 15, 2012, whichever date is sooner. In addition, in consideration of the Companies' commitment to Shut Down Unit 1, this ACO relieves the Companies from the provisions of the second paragraph of the May 29, 2003 B.L. England coal reauthorization (Application for Renewal) and Attachment 1, Conditions 6 (Efforts to Continue to Reduce Sulfur Dioxide Emissions) and 7 (Annual Report).

99. In the event that the Companies do not elect to Repower and are unable to Shut Down Unit 1 in accordance with Section III ("Shut Down or Repowering of Facility") of this ACO and must instead meet the SO2 Performance Standard outlined in Section XII ("Stipulations and Preservation of Rights") of this ACO, the Companies shall comply with the requirements of N.J.A.C. 7:27-10.2(a)-(c) by December 15, 2012 or any extension of this deadline granted by

NJDEP pursuant to Section XXI ("Force Majeure") of this ACO.

100. To determine compliance with the mean sulfur content of 1.90% (monthly) and 1.70% (12-month rolling average) sulfur in coal limits, the Companies shall utilize the following procedures to account for downtime of Unit 1: The 1.90% monthly average shall only include any month with 15 days or more of coal burning, including partial days. The 1.70% annual average (12-month rolling average) shall only include consecutive rolling months (excluding those months with less than 15 days of coal burning, including partial days) where 15 days or more of coal burning, including partial days, occurred.

101. No later than 10 business days after the effective date of this ACO, the Companies shall withdraw the applications for contested case hearings in Atlantic City Electric Company, B.L. England Station v. NJDEP, OAL Dkt. No. EEQ 2999-03 and Atlantic City Electric Company v. NJDEP, Bureau of Operating Permits, OAL Dkt. No. EEQ 5221-04 regarding the combustion of coal at B.L. England Unit 1 with a maximum sulfur content in excess of 1%.

X. CAFRA AND FRESHWATER WETLANDS PROTECTION ACT PERMITS

102. On October 1, 2004, NJDEP issued to the Companies a) a Freshwater Wetlands Permit and Special Activity Transition Area Waiver (collectively, "FWW Permits") for the 69kV and 230kV power line upgrades of the Cedar substation-to-Oyster Creek substation portion of the COC Project and b) CAFRA permits for the Ship Bottom and Cedar substations and the 69kV and 230kV power line upgrades of the Cedar substation to Oyster Creek substation portion of the COC Project.

103. NJDEP shall not require CAFRA review of the transmission line upgrade between the Cardiff and Cedar substations.

104. NJDEP is requiring the Companies, and the Companies have agreed, subject to Paragraphs 105 and 106 below, to apply for a CAFRA permit for the Dennis substation. NJDEP agrees that the Companies will fulfill the applicable impervious cover and vegetative cover requirements of N.J.A.C. 7:7E at the Dennis substation by recording, in a Department-approved document, a conservation restriction, as defined in N.J.A.C. 7:7-1.3 and N.J.A.C. 7:7E-1.8, for approximately 11.5 acres of the Companies' Dennis substation property and by contributing within ninety (90) days of the effective date of this ACO $220,000 to a charitable conservancy (as defined in N.J.S.A. 13:8B-2(a)), with the proviso that said funds will be used to acquire real property 1) within the same watershed area as the Dennis substation or, if that is not feasible, 2) elsewhere within Cape May County. In addition, any such real property shall be of a similar character to that on which the Dennis substation is located, i.e., forested property. The Companies specifically reserve the right to appeal from any adverse CAFRA permit decision and/or any condition set forth within any CAFRA permit issued pursuant to the application for the Dennis substation, except for the terms in a CAFRA permit for the Dennis substation as described in this Paragraph 104. The requirements of this Paragraph 104 shall apply regardless of any action taken, or not taken, with respect to the appeal described in Paragraph 105 below.

105. In consideration of NJDEP's agreement not to require CAFRA review of the transmission line upgrade between the Cardiff and Cedar substations and NJDEP's issuance of CAFRA permits for the Ship Bottom and Cedar substations and the 69kV and 230kV power line

upgrades of the Cedar substation to Oyster Creek substation portion of the COC Project, the Companies and NJDEP have requested the Appellate Division to stay the Companies' appeal in the action captioned Atlantic City Electric. Co. v. NJDEP, Docket No. A-001156-03T5 (Superior Court of New Jersey, Appellate Division). On January 12, 2006, the Appellate Division issued an Order staying these appellate proceedings for a period of six months. If at the end of this six month period NJDEP has not adopted a final rule as set forth in this Paragraph 105, the Companies and NJDEP agree jointly to request the Appellate Division to grant a further stay of the Companies' appeal in the above-referenced action. In consideration of the Companies' agreement to (1) prepare and file a joint motion with NJDEP seeking a further stay, if necessary, of this appeal, and (2) file an application for a CAFRA permit for the Dennis substation while continuing to contest NJDEP's CAFRA jurisdiction over electrical substations, NJDEP agrees expeditiously to propose a rule to amend its Coastal Permit Program Rules (N.J.A.C. 7:7) and/or its Coastal Zone Management Rules (N.J.A.C. 7:7E), both of which set forth NJDEP's rules in reviewing coastal permit applications, so as to exempt electrical substations from the impervious cover and vegetative cover requirements of Subchapters 5, 5A and 5B of N.J.A.C. 7:7E. Provided that NJDEP adopts a final rule amending its Coastal Permit Program Rules (N.J.A.C. 7:7) and/or its Coastal Zone Management Rules (N.J.A.C. 7:7E) so as to exempt electrical substations from the impervious cover and vegetative cover requirements of Subchapters 5, 5A and 5B of N.J.A.C. 7:7E, and provided NJDEP's rule is final and unappealable, the Companies thereafter shall withdraw their appeal in the above-referenced matter. If NJDEP fails to adopt a final rule as set forth herein by the time the Appellate Division's January 12, 2006 stay expires, and if the Appellate Division refuses to grant a further stay of the appellate proceedings in the above-

referenced matter, the Companies may advise the Appellate Division that they wish that the stay be lifted and to proceed with the appeal.

106. The Companies' application for and acceptance of the CAFRA permits for the Ship Bottom, Cedar and Dennis substations and for the transmission line upgrade between the Cedar substation and the Oyster Creek substation portions of the COC Project shall not serve as a precedent with respect to NJDEP's CAFRA jurisdiction over power lines or electrical substations, and the Companies reserve the right to challenge any future jurisdictional determinations for any future projects involving electrical substations. NJDEP recognizes and reconfirms its March 11, 2005 revised jurisdictional determination on limited remand in Atlantic City Electric. Co. v. NJDEP, Docket No. A-001156-03T5 (Superior Court of New Jersey, Appellate Division) that it does not have CAFRA jurisdiction over power lines. NJDEP, however, reserves its rights to assert jurisdiction over any future projects involving electrical substations.

107. NJDEP will make an expeditious determination on the Companies' applications for permits and/or approvals necessary for construction or expansion of substation and transmission facilities necessary to Compensate Electrically for the Shut Down of B.L. England and/or to fulfill otherwise the duty set forth in N.J.A.C. 14:3-3.1 to furnish safe, adequate, and proper service.

XI. SCOPE OF RELEASE

108. The Companies' compliance with this ACO resolves the Companies' alleged civil liability with regard to: 1) any alleged violations of the APCA, N.J.S.A. 26:2C-1 et seq., and its

implementing regulations, N.J.A.C. 7:27-8.1 et seq. and N.J.A.C. 7:27-18.1 et seq., that may have arisen from any physical or operational changes that the Companies may have undertaken at B.L. England prior to the effective date of this ACO; 2) any claims that NJDEP could bring against the Companies under the Citizen Suit provisions of the federal Clean Air Act for alleged violations of the Prevention of Significant Deterioration provisions, 42 U.S.C. §§ 7470-7492 (and their implementing regulations, 40 C.F.R. 52.21 et seq.), arising from any physical or operational changes that the Companies may have undertaken at B.L. England prior to the effective date of this ACO; 3) any claims that NJDEP could bring against the Companies under the New Source Performance Standard program of Section 111 of the federal Clean Air Act, 42 U.S.C. § 7411 (and its implementing regulations, 40 C.F.R. 60.1 et seq.), arising from any physical or operational changes that the Companies may have undertaken at B.L. England prior to the effective date of this ACO; and 4) Natural Resource Damages for groundwater contamination arising from a discharge of Hazardous Substances prior to the effective date of this ACO at the B.L. England, Deepwater, and Pleasantville Sites. In consideration of the Companies' compliance with this ACO, NJDEP covenants not to sue and releases the Companies from liability for all of the foregoing civil claims that were or could have been brought by NJDEP against the Companies.

109. The Parties acknowledge that this ACO does not specify or require the donation of any particular property nor is such intended by NJDEP. It is understood by the Companies that this ACO does not constitute an interference with any existing contract that any of the Companies has with any third party regarding any particular property owned by any of the Companies.

XII. STIPULATIONS AND PRESERVATION OF RIGHTS

110. If the Companies are unable to Shut Down B.L. England Unit 1 in accordance with Paragraph 77 by December 15, 2007, the Companies shall not operate B.L. England Unit 1 from December 16, 2007 to December 15, 2012 except as otherwise provided in this Section XII. From December 16, 2007 to either 1) December 15, 2011 (the Repower date), or 2) December 15, 2012, (or any extension of these deadlines granted by NJDEP pursuant to Section XXI ("Force Majeure") of this ACO), the Companies may operate Unit 1: 1) as necessary for PJM capacity tests; emission compliance testing; EPA-required relative accuracy test audits, CEMS certifications; Title V compliance certifications; and for compliance, performance, and optimization tests associated with pollution control projects to Repower or meet the Performance Standards set forth in this Paragraph 110; and/or 2) during "peak reliability periods" as defined in Section II (Definitions) of this ACO. The Companies shall either Repower by December 15, 2011, or shall permanently Shut Down Unit 1 or meet the following Performance Standards by December 15, 2012: 1) a 30-day rolling average emission rate of no greater than 0.150 lbs/mmBtu and no greater than 0.250 lbs/mmBtu based on a 24-hour emission rate for SO2; 2) a 30 -day rolling average emission rate of no greater than 0.130 lbs/mmBtu and no greater than 0.150 lbs/mmBtu based on a 24-hour emission rate for NOx; and 3) a 30-day rolling average emission rate of no greater than 0.030 lbs/mmBtu for particulate matter.

111. If the Companies are unable to Shut Down B.L. England Unit 2 in accordance with Paragraph 77 by December 15, 2007, the Companies shall operate Unit 2 in accordance with all applicable permits and shall either Repower by December 15, 2011, or shall ensure that by

May 1, 2010 Unit 2 meets the following Performance Standards: 1) a 30-day rolling average emission rate of no greater than 0.150 lbs/mmBtu and no greater than 0.250 lbs/mmBtu based on a 24-hour emission rate for SO2; 2) a 30-day rolling average emission rate of no greater than 0.130 lbs/mmBtu and no greater than 0.150 lbs/mmBtu based on a 24-hour emission rate for NOx; and 3) a 30-day rolling average emission rate of no greater than 0.030 lbs/mmBtu for particulate matter. Between December 16, 2007 and either 1) December 15, 2011 (the Repower date), or 2) May 1, 2010 (or any extension of these deadlines granted by NJDEP pursuant to Section XXI ("Force Majeure") of this ACO), the Companies shall use all reasonable efforts to achieve the lowest NOx emissions practicable, with the goal of achieving a 30-day rolling average emission rate of 0.25 lbs/mmBtu for NOx. This 30-day rolling average emission rate goal of 0.25 lbs/mmBtu for NOx shall not be included in any Title V permit issued by NJDEP.

112. Unit 3 shall continue to operate, consistent with this ACO and the applicable permits and authorizations for this Unit, and consistent with all other regulatory requirements, until both Unit 1 and Unit 2 are Shut Down and Dismantling activities have begun. All remaining air emissions sources at B.L. England, including but not limited to diesel generators, shall continue to operate consistent with this ACO and the applicable permits and authorizations for these sources.

113. If, for whatever reason other than a Force Majeure event as described in Section XXI of this ACO, the Companies a) do not Repower by December 15, 2011, or b) do not Shut Down B.L. England Units 1 and 2 by December 15, 2007 and also do not meet the Performance Standards and deadlines described above in this Stipulation and Preservation of Rights

Section, as may be extended pursuant to Section XXI ("Force Majeure") of this ACO, the Companies shall pay to NJDEP a stipulated civil penalty of:

(i) $5 million for failure to meet any of the Performance Standards and deadlines described above in this Stipulation and Preservation of Rights Section of the ACO regarding Unit 1; and

(ii) $5 million for failure to meet any of the Performance Standards and deadlines described above in this Stipulation and Preservation of Rights Section of the ACO regarding Unit 2.

In no event shall penalties under this Paragraph 113 exceed $5 million at Unit 1 or $5 million at Unit 2. The stipulated civil penalties set forth in this Paragraph 113 shall not apply to any exceedances of the Performance Standards set forth in this ACO once compliance with such Performance Standards has been consistently achieved; provided, however, that if the pollution control equipment needed to meet the Performance Standards of this Section XII are operational by the deadlines described above in this Stipulation and Preservation of Rights Section, NJDEP will allow for a six month "shake down" period during which the stipulated civil penalty will not apply.

114. NJDEP reserves the right to seek specific performance of the Performance Standards set forth in this Section XII (Stipulation and Preservation of Rights) if B.L. England does not Shut Down by December 15, 2007. NJDEP shall not seek specific performance of the Performance Standards set forth in this ACO at B.L. England Unit 1 prior to June 15, 2013 (which includes a six-month "shake down" period, as referenced in Paragraph 113 above), or

any extended deadline for meeting the Performance Standards granted by NJDEP in accordance with Section XXI ("Force Majeure") of this ACO, or at B.L. England Unit 2 prior to November 1, 2010 (which includes a six-month "shake down" period, as referenced in Paragraph 113 above), or any extended deadline for meeting the Performance Standards granted by NJDEP in accordance with Section XXI ("Force Majeure").

XIII. ALLOWANCES

115. If the Companies Shut Down B.L. England Units 1 and 2 by December 15, 2007, the Companies, contingent upon BPU authorization recognizing the cost impacts of this Section of the ACO, shall, after satisfying any applicable True-Up Requirements, Surrender to NJDEP NOx Allowances for B.L. England Units 1 and 2 for the 2007 ozone season. Similarly, the Companies, contingent upon BPU authorization recognizing the cost impacts of this Section of the ACO, shall Surrender to NJDEP a) NOx Allowances for B.L. England Units 1 and 2 for the 2008 ozone season that were allocated to the Companies in 2005; b) NOx allowances for B.L. England Units 1 and 2 for the 2009 ozone season that will be allocated to the Companies in 2006; and c) NOx Allowances for B.L. England Units 1 and 2 for the 2010 ozone season that will be allocated to the Companies in 2007. If B.L. England Shuts Down by December 15, 2007, no NOx Allowances for Units 1 and 2 will be allocated in 2008 or thereafter under the New Jersey NOx Budget Program, N.J.A.C. 7:27-31 et seq. If Shut Down of either Unit is delayed or extended beyond December 15, 2007 for any reason, the Companies shall Surrender NOx Allowances in conformity with the principles outlined in this Section.

116. If the Companies Shut Down B.L. England Units 1 and 2 by December 15, 2007, the

Companies, contingent upon BPU authorization recognizing the cost impacts of this Section of the ACO, shall, after satisfying any applicable True-Up requirements, Surrender to EPA all SO2 Allowances allocated by EPA to B.L. England Units 1 and 2 for vintage year 2007 and subsequent vintage years, including SO2 Allowances allocated by EPA to B.L. England Units 1 and 2 after the date of Shut Down. If Shut Down of either Unit is delayed or extended beyond December 15, 2007 for any reason, the Companies shall Surrender SO2 Allowances in conformity with the principles outlined in this Section.

117. If the Companies, through no fault of their own, are unable to Shut-Down B.L. England by December 15, 2007, or by such later date as provided in this ACO, and instead either 1) meet the Performance Standards delineated in Section XII ("Stipulations and Preservation of Rights") by the deadlines specified therein, or 2) Repower by December 15, 2011 (or any extension of these deadlines granted by NJDEP pursuant to Section XXI ("Force Majeure") of this ACO), the Companies may use any SO2 Allowances allocated to B.L. England Units 1 and 2 for vintage years 2007 and beyond only to satisfy the operational needs of these Units and shall not use such SO2 Allowances at any other unit the Companies own and/or operate nor sell or transfer to a third party (except through a transaction provided for in Section I (Applicability) of this ACO) any such SO2 Allowances allocated to B.L. England Units 1 and 2. Nothing in this ACO shall preclude the Companies from transferring SO2 Allowances between B.L. England Units 1 and 2. Subject to BPU authorization recognizing the cost impacts of this Section of the ACO, the Companies shall Surrender to EPA, or transfer to a non-profit third party for the purpose of retirement, any vintage year 2007 and beyond SO2 Allowances allocated to B.L. England Units 1 and 2 that exceed the operational needs of B.L. England Units 1 and 2. In retiring these Allowances, the Companies shall use the applicable

EPA Acid Rain Program Allowance Transfer Form.

118. If the Companies, through no fault of their own, are unable to Shut-Down B.L. England by December 15, 2007, or by such later date as provided in this ACO, and instead either 1) meet the Performance Standards delineated in Section XII ("Stipulations and Preservation of Rights") by the deadlines specified therein, or 2) Repower by December 15, 2011 (or any extension of these deadlines granted by NJDEP pursuant to Section XXI ("Force Majeure") of this ACO), the Companies may use any NOx Allowances allocated to B.L. England Units 1 and 2 for the 2007 ozone season and subsequent ozone seasons only to satisfy the operational needs of these Units and shall not use such NOx Allowances at any other unit the Companies own and/or operate nor sell or transfer to a third party (except through a transaction provided for in Section I (Applicability) of this ACO) any such NOx Allowances. Nothing in this ACO shall preclude the Companies from transferring ozone season NOx Allowances between B.L. England Units 1 and 2. Subject to BPU authorization recognizing the costs impacts of this Section of the ACO, the Companies shall Surrender to NJDEP, or transfer to a non-profit third party for the purpose of retirement, any 2007 ozone season and subsequent ozone seasons NOx Allowances allocated to B.L. England Units 1 and 2 that exceed the operational needs of B.L. England Units 1 and 2.

119. If the Companies, through no fault of their own, are unable to Shut-Down B.L. England by December 15, 2007, or by such later date as provided in this ACO, and instead either 1) meet the Performance Standards delineated in Section XII ("Stipulations and Preservation of Rights") by the deadlines specified therein, or 2) Repower by December 15, 2011 (or any extension of these deadlines granted by NJDEP pursuant to Section XXI ("Force Majeure")

of this ACO), the Companies may use any annual NOx Allowances allocated to B.L. England Units 1 and 2 under the Clean Air Interstate Rule or NJDEP's implementing regulations (or any subsequent legislation) for 2009 and 2010 only to satisfy the operational needs of these Units and shall not use such annual NOx Allowances at any other unit the Companies own and/or operate nor sell or transfer to a third party (except through a transaction provided for in Section I (Applicability) of this ACO) any such annual NOx Allowances. Nothing in this ACO shall preclude the Companies from transferring annual NOx Allowances between B.L. England Units 1 and 2. Subject to BPU authorization recognizing the costs impacts of this Section of the ACO, the Companies shall Surrender to NJDEP, or transfer to a non-profit third party for the purpose of retirement, any annual NOx Allowances allocated to B.L. England Units 1 and 2 for 2009 and 2010 that exceed the operational needs of B.L. England Units 1 and 2.

120. If any NOx or SO2 Allowances are transferred directly to a non-profit third party, the Companies shall submit a report of such transfer to NJDEP within seven (7) business days of such transfer. Such report shall: (i) provide the identity of the non-profit third-party recipient(s) of the NOx or SO2 Allowances and a listing of the serial numbers of the transferred NOx or SO2 Allowances; (ii) demonstrate that the non-profit third-party recipient(s) will not sell, trade, or otherwise exchange any of the NOx or SO2 Allowances; (iii) demonstrate that the non-profit third party recipient(s) will not use any of the NOx or SO2 Allowances to meet any obligation imposed by any environmental law; and (iv) demonstrate that the non-profit third-party recipients(s) will Surrender the NOx or SO2 Allowances to EPA or NJDEP within one year after the Companies transfer the NOx or SO2 Allowances to the non-profit third-party recipient(s). The Companies shall not have complied

with the Allowance Surrender requirements of this Section XIII (Allowances) of the ACO until all non-profit third-party recipient(s) shall have actually Surrendered the transferred NOx or SO2 Allowances to EPA or NJDEP.

121. For all SO_2 Allowances Surrendered to EPA pursuant to this ACO, the Companies shall first submit the applicable EPA Acid Rain Program Allowance Transfer Form to EPA's Office of Air and Radiation's Clean Air Markets Division directing the transfer of the SO2 Allowances held or controlled by the Companies to the EPA Enforcement Surrender Account or to any other EPA account that the Agency may direct. As part of submitting these transfer requests, the Companies shall irrevocably authorize the transfer of these SO_2 Allowances and identify, by name of account and any applicable serial or other identification numbers or station names, the source and location of the SO_2 Allowances being Surrendered.

122. For all NOx Allowances Surrendered to NJDEP pursuant to this ACO, the Companies shall submit those NOx Allowances for deposit in the New Jersey Surrender Account, Account No. NJ0000000301. As part of submitting these NOx Allowances for deposit in the Surrender Account, the Companies shall identify, by name of account and any applicable serial or other identification numbers or station names, the source and location of the NOx Allowances being Surrendered.

123. The Companies may without limitation use, sell, or transfer 100% of any NOx Allowances from the 2006 ozone season or earlier, any SO2 Allowances allocated by EPA to Units 1 and 2 for vintage year 2006 or earlier or any Clean Air Interstate Rule annual NOx Allowances for vintage years 2011 and following.

124. Notwithstanding any provision of this ACO to the contrary, in the event that the BPU determines that the value of some or all of the NOx Allowances or SO2 Allowances to be Surrendered in accordance with this Section XIII (Allowances) of the ACO should accrue to the benefit of ratepayers and should not be Surrendered, this ACO shall not restrict the Companies' use or disposition of that portion of the NOx Allowances or SO2 Allowances allocated to B.L. England Units 1 or 2 which the BPU determines should not be Surrendered.

125. As provided in Paragraph 12, a proper allocation of B.L. England Units 1 and 2 NOx or SO2 Allowances among the Companies and a Third Party shall mean (1) provisions in a Third Party Agreement pursuant to which NOx and SO2 Allowances are transferred at closing or year by year only to satisfy the operational needs of the Unit(s); and/or (2) provisions in a Third Party Agreement that require the purchaser or transferee to Surrender any NOx or SO2 Allowances that are initially transferred to the purchaser or transferee but which subsequently become NOx or SO2 Allowances in excess of the NOx or SO2 Allowances needed to satisfy the operational needs of the Unit(s). Notwithstanding any provision of the ACO to the contrary, in the event that the BPU determines that the value of some or all of the NOx Allowances or SO2 Allowances i) that were retained by the Companies pursuant to item (1) in the preceding sentence or ii) that are transferred to a purchaser or transferee pursuant to item (2) in the preceding sentence, should accrue to the benefit of ratepayers and should not be Surrendered, this ACO shall not restrict the use or disposition by the Companies or a purchaser or transferee of that portion of the NOx Allowances or SO2 Allowances allocated to B.L. England Units 1 or 2 which the BPU determines should accrue to the benefit of ratepayers and should not be Surrendered.

XIV. PERMITS, AUTHORIZATIONS, AND APPROVALS

126. In any instance where this ACO or otherwise applicable law requires the Companies to secure a Required Regulatory Approval, the Companies shall make such application in a timely and complete manner including, but not limited to, submitting a complete permit application and responding to requests for additional information by the regulatory authority in a timely fashion. Such applications shall be completed and submitted to the appropriate authorities to allow sufficient time for all legally required processing and review of the request for a Required Regulatory Approval. There are several instances in this ACO where the phrase "through no fault of their own" is used. For purposes of these provisions, any failure by the Companies to submit a timely application for a Required Regulatory Approval, or failure to provide supplemental information to the regulatory authority in a timely manner, shall be considered a "fault" attributable to the Companies.

127. In any instance where this ACO requires the Companies to secure a Required Regulatory Approval from NJDEP, NJDEP shall act expeditiously, and in parallel with other reviewing authorities, to review applications for such Required Regulatory Approval.

128. Nothing in this ACO shall be construed to relieve the Companies of any obligation to comply with Title V of the CAA and NJDEP's implementing regulations, N.J.A.C. 7:27-22 et seq. Subject to Paragraphs 129 and 130, the emission limits and corresponding performance deadlines, as set forth in Section XII (Stipulations and Preservation of Rights) of this ACO, and the emission rates, as set forth in Section XV (Emissions Rates) of this ACO, shall be incorporated as federally- and state-enforceable conditions in the Title V operating permit for B.L. England issued by NJDEP. All other performance or operational requirements of this

ACO that are included in the Companies' Title V operating permit for B.L. England shall be incorporated as state-enforceable only conditions in the permit.

129. The Title V operating permit issued by NJDEP shall not include conditions on NOx, SO2, and PM emissions for B.L. England Units 1 and 2 that are more stringent than those provided by this ACO or impose conditions on NOx, SO2, and PM emissions for B.L. England Units 1 and 2 by deadlines earlier than those specified in this ACO or any extended deadline pursuant to the terms of this ACO, except as required by federal or state law.

130. If a final Title V operating permit is issued prior to the effective date of this ACO, the Companies shall, within 30 days after the effective date of this ACO, submit an application to modify the Title V operating permit to include a schedule for applicable requirements established in this ACO.

131. A Title V operating permit shall not be directly enforceable under this ACO, although any term or limit established by or under this ACO shall be enforceable under this ACO (subject to the terms of Section XIX (Termination) herein), regardless of whether such limit has or will become part of a Title V operating permit. Notwithstanding the foregoing, NJDEP may seek enforcement of any term or limit incorporated into a Title V operating permit pursuant to either an action to enforce such permit or an action to enforce this ACO, but not both.

XV. EMISSIONS RATES

132. In determining compliance with the Performance Standards for B.L. England Units 1 and 2 set forth in Section XII ("Stipulations and Preservation of Rights") of this ACO, the

provisions of this Section XV ("Emissions Rates") shall apply.

133. In determining SO_2 Emission Rates, the Companies shall use the methods specified in 40 C.F.R. Part 75, Appendix F and 40 C.F.R. Part 60, Appendix A.

134. In determining NOx Emission Rates, the Companies shall use the methods specified in 40 C.F.R. Part 75, Appendix F and 40 C.F.R. Part 60, Appendix A.

135. The reference method for determining PM Emission Rates shall be New Jersey Air Test Method 1, "Sampling and Analytical Procedures for Determining Emissions of Particles from Manufacturing Processes and from Combustion of Fuels," N.J.A.C. 7:27B-1 et seq.

136. If the Companies do not Shut Down B.L. England as described in this ACO, they shall submit to NJDEP for review and approval a protocol for measuring PM emissions in accordance with the reference method set forth in the immediately preceding paragraph.

137. The Companies shall calculate the PM Emission Rate from the annual stack tests in accordance with 40 C.F.R. § 60.8(f) and the emission test protocol approved by NJDEP pursuant to Paragraph 136 of this ACO.

138. The Companies shall conduct stack testing for PM emissions at Units 1 and 2 of B.L. England in accordance with the protocol approved by NJDEP pursuant to Paragraphs 135-137 of this ACO and as required by its permits from the State of New Jersey. The Companies shall report to NJDEP the results of the stack tests within 60 days of conducting such tests, unless NJDEP provides the Companies with additional time in which to submit such test results.

XVI. STIPULATED ADMINISTRATIVE PENALTIES

139. Except as provided in Sections XXI ("Force Majeure") and XII ("Stipulations and Preservation of Rights") of this ACO, the Companies may be subject to stipulated administrative penalties to NJDEP for failure to comply with the provisions of this ACO in accordance with the following payment schedule:

Calendar Days after Due Date	Per Calendar Day
1 - 7	$ 500.00
8 - 14	$1,000.00
15 or more	$3,000.00

The stipulated administrative penalties set forth in this Section XVI shall not apply to failures to comply with the provisions of Section III (Shut Down of Facility), Section IV (Groundwater: Clean Up and Natural Resource Damages), and/or Section XII (Stipulations and Preservation of Rights).

140. Within fourteen (14) calendar days after receipt of a written demand from NJDEP for stipulated administrative penalties referenced in the immediately preceding paragraph, the Companies will submit a check to the Department, made payable to the "Treasurer, NJDEP of New Jersey" and remit with the associated invoice to the Department of Treasury, Division of Revenue, P.O. Box 417, Trenton, NJ 08625-0417.

141. If the Companies dispute their obligation to pay part or all of a demanded stipulated civil penalty

under Section XII (Stipulations and Preservation of Rights) or a stipulated administrative penalty under this Section XVI (Stipulated Administrative Penalties), they may avoid the imposition of a separate stipulated administrative penalty for failure to pay the disputed stipulated penalty (civil or administrative) by depositing the disputed amount in a commercial escrow account pending resolution of the matter. If the dispute is thereafter resolved in the Companies' favor, the escrowed amount, plus accrued interest shall be returned to the Companies. If the dispute is resolved in NJDEP's favor, NJDEP shall be entitled to the escrowed amount determined to be due by the Court, plus any accrued interest.

142. If the Companies fail to pay stipulated administrative penalties under this Section XVI (Stipulated Administrative Penalties) or civil penalties pursuant to Section XII (Stipulations and Preservation of Rights) of this ACO, NJDEP may institute civil proceedings to collect such penalties pursuant to N.J. Court Rules R. 4:67-6 and R. 4:70, assess civil administrative penalties for the violations of this ACO, or take any other appropriate enforcement action authorized by law. The Companies reserve all rights to appeal or otherwise challenge any assessment of or demand for stipulated administrative penalties under this Section XVI (Stipulated Administrative Penalties) or stipulated civil penalties under Section XII (Stipulations and Preservation of Rights) and any associated enforcement action under this ACO.

143. The payment of stipulated penalties does not alter the Companies' responsibility to complete all requirements of this ACO.

144. Stipulated administrative penalties under this ACO shall not apply in connection with the Companies' ongoing remediation under ISRA, N.J.S.A. 13:1K-6 et seq., at the B.L. England or Deepwater Sites, or in connection with remediation at the Pleasantville Site under the existing Memorandum of

Agreement with NJDEP.

XVII. GENERAL PROVISIONS

145. Effect of Settlement. This ACO is not a permit, and except as specifically provided by this ACO, compliance with the terms of this ACO does not guarantee compliance with all applicable federal, State, or local laws or regulations. NJDEP reserves all statutory and common law rights to require the Companies to take additional action(s) if the Department determines that such actions are necessary to protect public health, safety, welfare, and the environment. Nothing in this ACO shall constitute a waiver of any statutory or common law right of the Department to require such additional actions should the Department determine that such actions are necessary. The Companies reserve all defenses to any such additional or future actions.

146. No Waiver. Nothing in this ACO shall constitute a waiver by the Parties of any statutory or common law rights relating to matters not covered by this ACO. Nothing in this ACO shall be considered a waiver of the Companies' ability to challenge any NJDEP requirement, claim, or action concerning (i) compensation for Natural Resource Damages for Natural Resources other than groundwater at the B.L. England, Deepwater, or Pleasantville Sites; (ii) CAFRA jurisdiction over power lines or electrical substations, or (iii) the remediation of groundwater or other Natural Resources at the B.L. England, Deepwater or Pleasantville Sites, provided that with respect to the remediation of groundwater, the Companies' reservation of rights herein shall not be a disclaimer of their general obligation to remediate groundwater contamination pursuant to applicable statutory and regulatory standards as set forth in Paragraph 84 of this ACO.

147. No Admission of Liability. Neither the entry of this ACO nor the payment of the associated penalty

shall constitute an admission of liability by the Companies for any of the alleged violations described herein.

148. Compliance by the Companies with any extension of time granted by NJDEP in writing pursuant to Section XXI ("Force Majeure") of this ACO for complying with any terms of this ACO shall be deemed compliance with the terms of the ACO.

149. In any subsequent administrative or judicial action initiated by NJDEP for injunctive relief or civil or administrative penalties to enforce the provisions of this ACO, the Companies shall not contest either the Court's jurisdiction or NJDEP's jurisdiction over any of the matters covered by this ACO, with the exception of NJDEP's jurisdiction under the PSD provisions (Part C) of the Clean Air Act, 42 U.S.C. §§ 7470-7492 (and EPA's implementing regulations) and NJDEP's jurisdiction to require a CAFRA permit for projects involving power lines or electrical substations. In addition, in any such subsequent administrative or judicial action the Companies shall not assert against the State of New Jersey any defense or claim based upon principles of waiver, res judicata, collateral estoppel, issue preclusion, claim splitting, entire controversy, or any other defense based on the contention that the claims raised by NJDEP in the subsequent proceeding were brought, or should have been brought, in connection with this ACO. The Companies reserve the right to raise any and all defenses and to contest NJDEP's jurisdiction in any action brought by a third party, including the United States or other States, for injunctive relief or civil or administrative penalties relating to the matters covered by this ACO.

150. The Companies agree not to contest the terms or conditions of this ACO except that the Companies reserve the right to request and obtain clarification from NJDEP regarding the Department's interpretation or application of the terms or conditions of this ACO, and to contest the Department's

interpretation or application of such terms or conditions in any action to enforce this ACO. NJDEP shall respond to any request for clarification within 20 days of the Department's receipt of the request for clarification. The Companies' request for clarification must be made sufficiently in advance such that the Companies are able to meet all deadlines imposed by this ACO. Nothing in this paragraph extends or tolls deadlines in this ACO.

151. Except as otherwise provided in this Section, the Companies expressly reserve the right, entirely at their own risk, not to comply with any term, condition or demand for payment of stipulated penalties under this ACO, and to defend themselves in any action brought to enforce such terms, conditions, or demand for payment. Pursuant to N.J.S.A. 13:1D-9, NJDEP may bring an action to enforce any term, condition, or demand for civil or administrative stipulated penalties of the ACO either by instituting an action in the New Jersey Superior Court or by instituting proceedings in the Office of Administrative Law. Any action instituted in Superior Court to collect civil or administrative stipulated penalties shall be pursuant to N.J. Court Rules, R. 4:67 and/or R. 4:70. In the event that the Department prevails in any such enforcement action, the Companies shall be liable for any stipulated penalties which accrued during the period of non-compliance, which shall not include the period during which such enforcement action is pending.

152. Effective Date. This ACO shall become effective upon the execution hereof by both Parties.

153. Modification/Waiver. No modification or waiver of this ACO shall be valid except by written amendment executed by the Companies and NJDEP.

154. Severability. If any provision of this ACO is found invalid or unenforceable, the remainder of this ACO shall not be affected thereby and each provision shall be valid and enforced to the fullest extent

permitted by law.

155. Citations to Law. Provisions of law expressly cited by this ACO shall be construed to mean the provision as it exists on the effective date of this ACO.

156. Meaning of Terms. Every term expressly defined by this ACO shall have the meaning given to that term by this ACO. Every other term used in this ACO that has a definition in applicable State or federal law shall have in this ACO the same meaning ascribed to it in State or federal law. Whenever used in this ACO, the term "including" shall be deemed followed by the words "without limitation".

157. Other Laws. Nothing in this ACO shall relieve the Companies of their obligation to comply with all applicable federal, State, and local laws and regulations, except as provided herein.

158. Third Parties. This ACO does not limit, enlarge, or affect in any way the rights of any Party to this ACO as against any third parties. This ACO does not relieve the Companies in any way of their obligations with respect to matters under the jurisdiction of the BPU. Similarly, this ACO does not in any way limit the BPU's jurisdiction or its decisions concerning ratemaking issues. Except as expressly and to the extent provided herein, the Parties agree that nothing in this ACO shall be construed as future legal precedent.

159. Public Documents. All information and documents the Companies submit to NJDEP pursuant to this ACO shall be subject to public inspection; provided, however, that, at the time of submission, the Companies may identify any document as containing Confidential Business Information ("CBI"). For those documents for which the Companies make a CBI claim, NJDEP will, pursuant to the provisions of New Jersey's Open Public Records Act, N.J.S.A. 47:1A-1 et seq., and/or the regulations concerning confidentiality promulgated under the New Jersey Air Pollution Control Act

(N.J.A.C. 7:27-1 et seq.) and/or Industrial Site Recovery Act (N.J.A.C. 7:26B-7 et seq) make a determination of confidentiality.

160. Notice. Unless otherwise provided herein, written notifications to or written communications with NJDEP shall be deemed submitted on the date such written notifications or written communications are hand delivered or received by overnight delivery; overnight mail; or by certified or registered mail, return receipt requested. Such date will be the date NJDEP uses to determine compliance with the terms of this ACO. When this ACO requires written notification to or written communication with NJDEP, the Companies shall submit such written notification or written communication to:

Richelle Wormley, Manager
Air Compliance & Enforcement
Southern Regional Office
One Port Center, 2 Riverside Drive, Suite 201
Camden, NJ 08103

with a copy to:

Kevin Auerbacher, Section Chief
Environmental Enforcement
R.J. Hughes Justice Complex
25 Market Street
P.O. Box 093
Trenton, NJ 08625-0093

Each Party reserves its right to change either the notice recipient or the address for providing notices to it by providing the other Party with a written notice setting forth such new notice recipient or address. Unless otherwise specifically provided herein, any communication made by the Department to the Companies pursuant to this ACO shall be sent to:

Thomas S. Shaw
Executive Vice President
Pepco Holdings, Inc.
800 King Street
P.O. Box 231

Wilmington, DE 19899-0231

Mailstop: 89KS55

with a copy to:

Kirk J. Emge
Vice President, Legal Services
Pepco Holdings, Inc.
800 King Street
P.O. Box 231
Wilmington, DE 19899-0231

Mailstop: 89KS42

161. Nothing in this ACO shall preclude the Department from taking enforcement action against the Companies for matters not set forth in the FINDINGS of this ACO.

162. Complete Agreement. This ACO constitutes the final, complete, and exclusive agreement and understanding between the Parties to this ACO with respect to the settlement embodied in this ACO. The Parties to this ACO acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this ACO.

163. Signatories and Counterparts. Each undersigned representative of the Companies certifies that he or she is fully authorized to enter into and to execute the terms and conditions of this ACO and legally bind the Company(ies) for which he or she signs. Each undersigned representative of NJDEP represents that each is fully authorized to enter into the terms and conditions of this ACO and legally bind NJDEP. This ACO may be executed in one or more counterparts, each of which shall be deemed an original as to any Party having executed it, but all of which together shall constitute one and the same document.

164. Applicable Law. The terms of this ACO shall be governed and interpreted under the laws of the State of New Jersey.

XVIII. RIGHT OF ENTRY

165. Any authorized representative of NJDEP, upon presentation of credentials, shall have a right of entry upon the premises of the B.L. England, Deepwater and/or Pleasantville Sites at any reasonable time for the purpose of monitoring compliance with the provisions of this ACO, including inspecting plant equipment and inspecting and copying any records necessary to determine compliance with this ACO. The Companies shall maintain such records for a period of five years from the date of entry of this ACO.

166. The Companies and NJDEP hereby consent to and agree to comply with this ACO which shall be fully enforceable as a final Administrative Order in the New Jersey Superior Court.

XIX. TERMINATION

167. Except as provided in Section I ("Applicability") of this ACO, this ACO shall terminate when NJDEP determines in good faith that all of the Companies' obligations under this ACO have been complied with and satisfied.

168. The Department reserves the right to terminate this ACO unilaterally and to take any additional enforcement action it deems necessary in the event the Companies 1) knowingly and willfully violate its terms, or 2) fail to act with due diligence in carrying out its terms. Before the Department unilaterally terminates this ACO, the Department shall notify the Companies in writing of the obligation(s) which they have not performed, and the Companies

shall have 30 calendar days after receipt of such notice to perform such obligation(s).

XX. PROGRESS REPORTS

169. The Companies shall submit semi-annual progress reports (i.e. reports for January 1 through June 30, and July 1 through December 31) to the Department 30 days after June 30 and December 31 or, if such date falls on a weekend or holiday, then the first business day thereafter. The first report shall be due July 30, 2006. Each report shall explain the status of and contain all necessary information to determine the Companies' compliance with this ACO and shall include, but not be limited to, the following:

a. Status of Required Regulatory Approvals;

b. After Shut Down of B.L. England, progress toward Dismantling B.L. England;

c. Difficulties or problems encountered during the reporting period and actions taken to rectify;

d. Activities planned for the next reporting period;

e. A summary of any violation, and any anticipated violation, of the requirements of this ACO; and

f. A summary of any report or communication filed with BPU, PJM and FERC pertaining to the Shut Down or Repowering of B.L. England.

170. Each of the Companies' progress reports shall be signed by a Conectiv Vice President, or

higher-ranking official, and shall contain the following certification:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attached documents and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information."

171. The Companies shall report to NJDEP any violation of the requirements of this ACO within 10 days of the Companies' discovery of any such violation.

172. Nothing herein relieves the Companies from their obligations under other ACOs or applicable federal, State, and local laws and regulations to submit reports, data or other information to the appropriate governmental authorities.

XXI. FORCE MAJEURE

173. For purposes of this ACO, the Companies failure to obtain Required Regulatory Approvals does not constitute a Force Majeure Event for purposes of tolling or extending the time by which the Companies must meet the Performance Standards delineated in Section XII ("Stipulations and Preservation of Rights") of this ACO. Subject to the preceding sentence, a "Force Majeure Event" shall mean (a) an event which causes a delay in performing any requirement of this ACO, where the delay has been or will be caused by circumstances beyond the Companies' control and which could not have been prevented by the exercise of due diligence, including delays caused by a failure of a regulatory authority to act in a timely fashion with respect to a permit, approval or authorization that the Companies sought in a

diligent and timely manner, and including the kinds of events listed in Paragraph 181 of this ACO; or (b) an equipment malfunction at B.L. England which causes a Unit to exceed a 24-hour or 30-Day Emission Rate required under this ACO, where such malfunction has been caused by circumstances beyond the Companies' control and could not have been prevented by the exercise of due diligence.

174. If a Force Majeure Event occurs, the Companies shall notify NJDEP in writing as soon as practicable, but in no event later than seven (7) business days following the date the Companies first knew, or within ten (10) business days following the date the Companies should have known by the exercise of due diligence--whichever comes earlier--that the Force Majeure Event caused or may cause such delay or exceedance. In this notice the Companies shall reference this paragraph of the ACO and describe the anticipated length of time that the delay or exceedance may persist, the cause or causes of the delay or exceedance, the measures taken or to be taken by the Companies to prevent or minimize the delay or exceedance, and the schedule by which those measures will be implemented. The Companies shall adopt all reasonable measures to avoid or minimize such delays or exceedances.

175. NJDEP shall notify the Companies in writing regarding their claim of Force Majeure within (15) fifteen business days of receipt of the Force Majeure notice provided under this section.

176. If NJDEP determines that a) a delay or exceedance has been or will be caused by a Force Majeure Event, and b) the Companies have taken all necessary actions to prevent or minimize the delay or exceedance, the Parties shall stipulate to an extension of the required deadline(s) for all requirement(s) affected by the delay or exceedance for a period of time equivalent to the delay actually caused by such circumstances. Provided, however, that a State or Federal

mandate to continue operations shall not toll the deadlines for meeting the Performance Standards set forth in Section XII ("Stipulations and Preservation of Rights") of this ACO.

177. The Companies shall not be liable for stipulated civil or administrative penalties, or for any exceedance of a 30-Day or 24-Hour Emission Rate, for a period that shall be equal to any delay caused by a Force Majeure Event under this Section XXI of the ACO.

178. If NJDEP denies the Companies' claim that a Force Majeure Event prevented them from meeting the deadlines or Performance Standards set forth in Section XII ("Stipulations and Preservation of Rights"), the Companies must pay the penalties as stipulated in Section XII of this ACO. If NJDEP denies the Companies' claim that a Force Majeure Event prevented them from meeting other obligations under this ACO, the Companies may be subject to the stipulated administrative penalties under this ACO. For any stipulated penalties that the Companies may be subject to because of NJDEP's denial of the Companies' claim of Force Majeure, the Companies, pursuant to Paragraph 151 of this ACO, may refuse NJDEP's demand for payment of such stipulated penalties and may raise whatever defenses they are otherwise entitled to assert in any action brought to enforce any demand for payment.

179. The Companies shall bear the burden of proving that any delay in performing any requirement of this ACO or any exceedance of a 24-Hour or 30-Day Emission Rate after the deadlines specified in this ACO was caused by or will be caused by a Force Majeure Event. The Companies shall also bear the burden of proving the duration and extent of any delay or exceedance attributable to a Force Majeure Event. An extension of one compliance date based on a particular Force Majeure Event may, but will not necessarily, result in an extension

of a subsequent compliance date.

180. Unanticipated or increased costs or expenses associated with the Companies' performance of their obligations under this ACO shall not constitute a Force Majeure Event. A breach by any of the Companies' contractors may, but shall not automatically, constitute a Force Majeure Event.

181. The Parties agree that, depending upon the circumstances related to an event and the Companies' response to such circumstances, the kinds of events listed below could also qualify as Force Majeure Events within the meaning of this Section: acts of God; acts of War; and acts of terrorism.

XXII. TELEMETERED EMISSIONS DATA

182. The Companies currently are required to telemeter emissions data, including certain data collected by an ambient monitoring network, from B.L. England to NJDEP by way of dedicated telephone lines. Since the ambient monitoring network is no longer required, and since the Companies submit quarterly certified excess emissions reports along with quarterly certified electronic data reports that contain CEMS and COMS (continuous opacity monitoring systems) data, the Companies have requested that they no longer be required to telemeter data to NJDEP.

183. Pursuant to the Companies' request, the Companies may stop telemetering of B.L. England emissions data to NJDEP upon the effective date of this ACO, provided that the Companies shall pay fees related to the telemetering of such data up to the effective date of this ACO or up to any subsequent date on which the Companies stop the telemetering of emissions data,

whichever is later.

FOR THE COMPANIES:

By this signature, I certify that I have full authority to execute this document on behalf of ATLANTIC CITY ELECTRIC COMPANY

DATED: _____

BY: _____

NAME: _____

TITLE: _____

By this signature, I certify that I have full authority to execute this document on behalf of CONECTIV

DATED: _____

BY: _____

NAME: _____

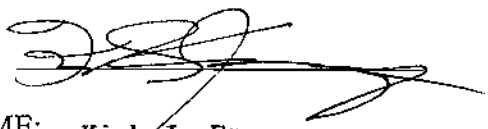
TITLE: _____

whichever is later.

FOR THE COMPANIES:

By this signature, I certify that I have full authority to execute this document on behalf of ATLANTIC CITY ELECTRIC COMPANY

DATED: January 24, 2006

BY: 

NAME: Kirk J. Emge

TITLE: General Counsel

By this signature, I certify that I have full authority to execute this document on behalf of CONECTIV

DATED: _____

BY: _____

NAME: _____

TITLE: _____

whichever is later.

FOR THE COMPANIES:

By this signature, I certify that I have full authority to execute this document on behalf of ATLANTIC CITY ELECTRIC COMPANY

DATED: _____

BY: _____

NAME: _____

TITLE: _____

By this signature, I certify that I have full authority to execute this document on behalf of CONECTIV

DATED: January 24, 2006

BY: Albert F. Kirby III

NAME: Albert F. Kirby, III

TITLE: Vice President

By this signature, I certify that I have full authority to execute this document on behalf of

PEPCO HOLDINGS, INC.

DATED: January 24, 2006

BY: _____

NAME: Thomas S. Shaw

TITLE: Executive Vice President and Chief Operating Officer

FOR NJDEP:

By this signature, I certify that I have full authority to execute this document on behalf of NJDEP

DATED: _____

BY: _____

NAME: Mark Mauriello

TITLE: Acting Assistant Commissioner
Land Use Management

DATED: _____

BY: _____

NAME: Wolfgang Skacel

TITLE: Assistant Commissioner
Compliance & Enforcement

By this signature, I certify that I have full authority to execute this document on behalf of

PEPCO HOLDINGS, INC.

DATED: _____

BY: _____

NAME: _____

TITLE: _____

FOR NJDEP:

By this signature, I certify that I have full authority to execute this document on behalf of NJDEP

DATED: 1/24/06

BY: Mark W. Mauriello

NAME: Mark Mauriello

TITLE: Acting Assistant Commissioner
Land Use Management

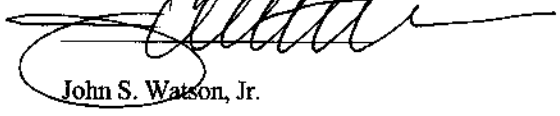
DATED: 1/24/06

BY:

NAME: Wolfgang Skacel

TITLE: Assistant Commissioner
Compliance & Enforcement

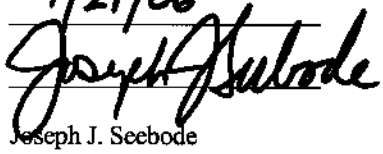
DATED: 1/24/06

BY: 

NAME: John S. Watson, Jr.

TITLE: Assistant Commissioner
Natural & Historic Resources

DATED: 1/24/06

BY: 

NAME: Joseph J. Seebode

TITLE: Assistant Commissioner
Site Remediation & Waste Management

Attachment 6

IN THE MATTER OF RC CAPE MAY HOLDINGS, L.L.C.

24 Waterway Avenue
Suite 800
The Woodlands, Texas 77380

ADMINISTRATIVE CONSENT ORDER AMENDMENT

The following SUPPLEMENTAL FINDINGS are made and this ADMINISTRATIVE CONSENT ORDER AMENDMENT to the January 24, 2006 Administrative Consent Order and the October 31, 2006 Administrative Consent Order Amendment *In the Matter of Atlantic City Electric Company, Conectiv and Pepco Holdings, Inc.* is entered into pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection by N.J.S.A. 13:1D-1 *et seq.* and the Air Pollution Control Act of 1954, N.J.S.A. 26:2C-1 *et seq.*, and duly delegated pursuant to N.J.S.A. 13:1B-4 to the Assistant Commissioner for Compliance and Enforcement.

SUPPLEMENTAL FINDINGS

1. The New Jersey Department of Environmental Protection ("NJDEP" or "the Department") and Atlantic City Electric Company, Conectiv Atlantic Generation, LLC, Conectiv, and Pepco Holdings, Inc. (collectively, "Conectiv") entered into an Administrative Consent Order ("ACO") dated January 24, 2006, resolving the Department's claims for, among other things: injunctive relief and civil penalties arising out of alleged violations of the Prevention of Significant Deterioration ("PSD") requirements in Part C of Title I of the Clean Air Act, 42 U.S.C. §§ 7470-7492, and its implementing regulations, 40 C.F.R. 52.21, and the New Jersey Air Pollution

Control Act, N.J.S.A. 26:2C-1 *et seq.*, and its implementing regulations, N.J.A.C. 7:27 *et seq.*;

2. Atlantic City Electric Company ("ACEC") entered into a Purchase and Sale Agreement with RC Cape May Holdings, LLC ("RC Cape May") dated August 15, 2006, pursuant to which ACEC sold the B.L. Generating Station to RC Cape May;

3. The Purchase and Sale Agreement, among other things, provides that RC Cape May will either Repower B.L. England or satisfy the Performance Standards of the ACO, as set forth in Section XII (Stipulations and Preservation of Rights) thereof;

4. In light of the Purchase and Sale Agreement, the Department, ACEC, Conectiv, Pepco Holdings, Inc. and RC Cape May on October 31, 2006, entered into an Amendment to the January 24, 2006 ACO pursuant to which RC Cape May agreed, among other things, to either Repower or meet the Performance Standards of the January 24, 2006 ACO (Section XII, Stipulations and Preservation of Rights) by the deadlines set forth therein for each unit;

5. RC Cape May has requested a revised timeline in which to either Repower or meet the Performance Standards of the January 24, 2006 ACO;

6. In exchange for agreeing to a revised timeline, the Department requires that RC Cape May implement an interim compliance program that achieves emission reductions for nitrogen oxides, and more stringent long-term emission limits that achieve greater long-term nitrogen oxides emission reductions, as well as other actions contained herein;

7. In light of these Supplemental Findings, the Department and RC Cape May (collectively, the "Parties") wish to enter into this Amendment, amending the January 24, 2006 ACO and the October 31, 2006 ACO Amendment, as follows:

ORDER

I. APPLICABILITY

8. The provisions of the October 31, 2006 ACO Amendment, as modified by this Amendment, shall continue to apply and be binding upon the Department and RC Cape May, its successors and assigns upon the Effective Date as set forth in Paragraph 41 hereof. The Parties agree that this Amendment imposes certain obligations upon RC Cape May in connection with the operation of B.L. England, and does not impose any additional obligations upon, or affect in any way the rights of, Conectiv as set forth in the ACO, the October 31, 2006 Amendment of the same, any permit issued to Conectiv or applicable law.

9. This Amendment addresses only certain parts of the January 24, 2006 ACO and October 31, 2006 ACO Amendment applicable to B.L. England. Nothing in this Amendment shall relieve RC Cape May of unfulfilled requirements of the January 24, 2006 ACO or of the October 31, 2006 ACO Amendment, except as explicitly set forth herein.

10. Obligations imposed by this Amendment are imposed pursuant to the police powers of the State of New Jersey for the enforcement of law and the protection of public health, safety, welfare and the environment. No obligations imposed by this Amendment are intended to constitute a debt, claim, penalty or other civil action that could be limited or discharged in a bankruptcy proceeding. Obligations imposed by this Amendment are not subject to the automatic stay of 11 U.S.C. § 362(a), but, instead, fall with the exemption from the automatic stay at 11 U.S.C. § 362(b)(4).

II. DEFINITIONS

11. For purposes of Section IV of this Amendment only, Operating Day for a unit means any calendar day on which the unit fires any amount of Fossil Fuel.

12. Fossil Fuel means any hydrocarbon fuel including coal, petroleum oil, or natural gas.

13. Repower means the replacement of an existing coal-fired boiler with a new heat source (*e.g.*, natural gas), or new coal-combustion technology (*e.g.*, circulating fluidized bed boilers or integrated gasification combined-cycle ("IGCC") technology).

14. For purposes of Section III of this Amendment only, Shut Down Day means any calendar day during which there is a Shut Down Period as defined in the current Title V permit, BOP090002, Ref. # 4, p. 76 of 145.

15. For purposes of Section III of this Amendment only, Start-Up Day means any calendar day during which there is a Start Up Period as defined in the current Title V permit, BOP090002, Ref. # 4, p. 74 of 145.

III. EMISSION REDUCTIONS AND PERFORMANCE STANDARDS

A. Performance Standards–B.L. England Unit 1

16. The January 24, 2006 ACO Paragraph 110, Section XII ("Stipulations and Preservation of Rights") is amended as follows: With regard to Unit 1, RC Cape May shall either Repower or shall meet the following Performance Standards by December 15, 2013: 1) NOx emission rates of no greater than 0.150 lb/mmBtu, 24-hour daily average, 0.110 lb/mmBtu, 30-day rolling average, and 0.100 lb/mmBtu, 90-day rolling average, provided the 90-day rolling average rate is demonstrated to be reasonably achievable based on one year of operations (during which time the

NOx air pollution control system will be optimized to minimize NOx emissions) with a compliance margin of twenty percent (20%), provided further that the Title V permit will not reflect the 90-day rolling average requirement until the one-year proving period is completed and a separate permit modification is processed; 2) SO2 emission rates of no greater than 0.150 lb/mmBtu, 30-day rolling average, and 0.250 lb/mmBtu, 24-hour daily average; 3) particulate matter emission rate of no greater than 0.030 lb/mmBtu, 3 hour average (as measured by annual stack emission testing, the average of three Department validated stack test runs). Absent these improvements, RC Cape May is permitted to continue to operate Unit 1 through September 30, 2013 in accordance with the restrictions outlined in Paragraph 110 of the January 24, 2006 ACO and further clarified in a letter dated February 4, 2008 from the NJDEP to RC Cape May. If RC Cape May does not achieve and maintain the foregoing emission rates by September 30, 2013, RC Cape May shall temporarily cease all operations of B.L. England Unit 1 until such time as Unit 1 is able to achieve and maintain the emission rates set forth herein provided, however, that if RC Cape May is not able to achieve and maintain these emission rates by December 15, 2015, Unit 1 may only restart operations if it obtains an operating permit modification which incorporates advances in the art of air pollution control, as defined in N.J.A.C. 7:27-22.35, as well as Best Available Control Technology ("BACT"), Lowest Achievable Emission Rate ("LAER"), and Maximum Achievable Control Technology ("MACT") applicable at the time of permitting. If RC Cape May determines to Repower Unit 1, it must obtain a permit modification that incorporates advances in the art of air pollution control, as defined in N.J.A.C. 7:27-22.35, applicable at the time of permitting, which may result in emission rates more stringent (and not

less stringent) than the emission rates set forth in this Paragraph 16.

B. Performance Standards–B.L. England Unit 2

17. The January 24, 2006 ACO Paragraph 111, Section XII ("Stipulations and Preservation of Rights") is amended as follows: RC Cape May shall operate Unit 2 in accordance with all applicable permits and shall ensure that by May 1, 2012, Unit 2 meets the following Performance Standards for NOx: a 24-hour daily average rate of no greater than 0.150 lb/mmBtu, a 30-day rolling average emission rate of no greater than 0.110 lb/mmBtu, and a 90-day rolling average emission rate of no greater than 0.100 lb/mmBtu, provided that the 90-day rolling average rate is demonstrated to be reasonably achievable based on one year of operations (during which time the NOx air pollution control system will be optimized to minimize NOx emissions) with a compliance margin of twenty percent (20%), provided further that the Title V permit will not reflect the 90-day rolling average requirement until the one-year proving period is completed and a separate permit modification is processed. By no later than May 1, 2010, RC Cape May shall ensure that Unit 2 meets the following Performance Standards for SO2 and PM: 1) SO2 emission rates of no greater than 0.150 lb/mmBtu, 30-day rolling average, and 0.250 lb/mmBtu, 24-hour daily average; and 2) particulate matter emission rate of no greater than 0.030 lb/mmBtu, 3 hour average (as measured by annual stack emission testing, the average of three Department validated stack test runs).

C. Interim NOx Emission Rates – B.L. England Units 1 and 2

18. By no later than the Effective Date of this Amendment, RC Cape May shall operate B.L. England Units 1 and 2 to achieve and maintain a NOx emission rate of 0.45 lb/mmBtu, 24-hour

daily average, except that this limit shall not apply during a Start-up Day or a Shut Down Day, as defined herein, provided RC Cape May undertakes best efforts to minimize NOx emissions during any Start-Up and Shut-Down Periods. For the avoidance of doubt, on any given day (the "Current Day") if RC Cape May is operating a unit under a full 24-hour Day Ahead Award from the PJM and has received a Day Ahead Schedule from the PJM for the next day, the Current Day will only be considered a Shut Down Day if the unit experiences a forced outage during the Current Day.

IV. CIVIL PENALTY

19. RC Cape May shall pay to NJDEP a civil penalty of $3,000 per day for each Operating Day that Unit 2 operates, as that term is defined herein, after May 1, 2010, without the requisite pollution control equipment necessary to ensure that Unit 2 meets the NOx emission rates set forth in Paragraph 17 of this Amendment. Payment shall be made quarterly in arrears by check or wire transfer payable to "Treasurer, State of New Jersey" and shall be submitted to:

New Jersey Department of Environmental Protection
Administrator, Air Compliance & Enforcement
401 E. State Street
P.O. Box 422
Trenton, NJ 08625-0422

20. If RC Cape May fails to install and operate pollution control equipment at B.L. England Unit 2 necessary to achieve and maintain the NOx emission rates specified in Paragraph 17 of this Amendment by May 1, 2012, subject to the six-month "shake down" allowance provided for in Paragraph 113 of the January 24, 2006 ACO, the stipulated civil penalty set forth in Paragraph 113(ii) of the January 24, 2006 ACO shall apply, in addition to any other penalties that may

apply under this Amendment or the October 31, 2006 ACO Amendment. The Parties agree that, with respect to Unit 1, the stipulated civil penalty set forth in Paragraph 113(i) of the January 24, 2006 ACO is hereby void and shall be of no further force and effect.

21. Should RC Cape May fail to meet the Performance Standards set forth in Section XII ("Stipulation and Preservation of Rights") of the January 24, 2006 ACO, as modified by this Amendment, by the deadlines set forth in this Amendment, NJDEP reserves the right to seek specific performance of the Performance Standards, as modified herein.

V. STIPULATED PENALTIES AND DISPUTE RESOLUTION

22. Within twenty-one (21) calendar days after receipt of a written demand from NJDEP, and subject to the provisions of Sections V (Dispute Resolution) and IX (Force Majeure), RC Cape May shall pay the following stipulated penalties to NJDEP by submitting a check or wire transfer payable to "Treasurer, State of New Jersey" to:

New Jersey Department of Environmental Protection
Administrator, Air Compliance & Enforcement
401 E. State Street
P.O. Box 422
Trenton, NJ 08625-0422

a. RC Cape May shall pay a stipulated penalty of $3,000 per day, per unit, for each day after the May 1, 2010, that B.L. England Units 1 and/or 2 exceed the interim NOx emission rates set forth at Paragraph 18 herein.

b. RC Cape May shall pay a stipulated penalty of $3,000 per day for each day after September 30, 2013, that B.L. England Unit 1 operates without meeting the NOx, SO2 and PM emission rates set forth in Paragraph 16 herein; provided, however,

that if the pollution control equipment needed to meet these emission rates is operational by September 30, 2013, and/or by the day on which RC Cape May recommences operation of Unit 1 after September 30, 2013, NJDEP will allow for a six-month "shake down" period during which this stipulated penalty will not apply

c. RC Cape May shall pay a stipulated penalty of $3,000 per day for failure to pay timely the civil penalties as specified in Section IV (Civil Penalty) of this Amendment.

23. If RC Cape May disputes its obligation to pay all or part of a demanded stipulated penalty under this Section or civil penalties under Section IV of this Amendment, it may avoid the imposition of a separate stipulated penalty for failure to pay the disputed penalty by depositing the disputed amount in a commercial escrow account pending resolution of the matter. If the dispute is thereafter resolved in RC Cape May's favor, the escrowed amount, plus accrued interest, shall be returned to RC Cape May. If the dispute is resolved in NJDEP's favor, NJDEP shall be entitled to the escrowed amount determined to be due by the Court, plus any accrued interest.

24. If RC Cape May fails to pay stipulated penalties under this Section or civil penalties pursuant to Section IV of this Amendment, NJDEP may institute civil proceedings to collect such penalties pursuant to N.J. Court Rules R. 4:70, assess civil administrative penalties for the violations of this Amendment, or take any other appropriate enforcement action authorized by law. RC Cape May reserves all rights to appeal or otherwise challenge any assessment of or

demand for stipulated penalties under this Section or stipulated civil penalties under Section IV and any associated enforcement action under this Amendment.

25. The payment of stipulated penalties does not alter RC Cape May's responsibility to complete all requirements of this Amendment.

VI. REPORTING

26. Beginning with the first calendar quarter following the Effective Date of this Amendment and continuing every calendar quarter thereafter for the duration of this Amendment, RC Cape May shall submit within thirty (30) days after the end of each quarter a report identifying the Operating Days, as defined herein, of B.L. England Units 1 and 2 during the preceding quarter and providing to NJDEP the same electronic data (and in the same format) on hourly heat input that RC Cape May provided to USEPA for the preceding quarter.

VII. HEAT INPUT LIMITS

27. Promptly after the Effective Date of this Amendment, RC Cape May will move the court to dismiss with prejudice its appeal of the Commissioner's Final Decision issued September 12, 2008, regarding the legality of hourly heat input limits on the B.L. England steam electric generating units and the diesel electric generators used for the purpose of generating electricity. This appeal is referenced by Docket Number A-000778-08T2, Conectiv–B.L. England Generating Station, Petitioner – Appellant v. New Jersey Department of Environmental Protection/Air Quality Division, Agency – Respondent.

28. RC Cape May will maintain maximum hourly heat input rates (High Heating Value) of no greater than the following: 1) for B.L. England Unit 1 – 1,300 mmBtu/hr; 2) for B.L. England

Unit 2 – 1,600 mmBtu/hr; 3) for B.L. England Unit 3 – 1,720 mmBtu/hr; and 4) for the B.L. England diesel electric generators – 26 mmBtu/hr for each generator.

29. RC Cape May may seek amended heat input limits through the normal operating permit modification process.

VIII. MONITORING FOR AMMONIA

30. RC Cape May shall by February 28, 2010, install a process monitor on B.L. England Unit 3 to measure ammonia emissions on a continuous basis and shall also stack test Unit 3 on an annual basis for the purpose of determining compliance with the ammonia emissions limit(s), as set forth in the B.L. England Title V operating permit, for Unit 3. Provided that RC Cape May installs and operates said ammonia monitor by February 28, 2010, it will not be required to conduct a stack test for ammonia during Unit 3's winter operations. The preceding amends Paragraph 1.C (Monitoring for Ammonia, Unit 3) of the April 21, 2008 Letter Settlement Agreement between RC Cape May and NJDEP insofar as the Letter Settlement Agreement requires RC Cape May to conduct semi-annual stack testing for ammonia, once during the summer and once during the winter. Nothing in this Amendment shall relieve RC Cape May of any other conditions or requirements of the April 21, 2008 Letter Settlement Agreement except as explicitly set forth herein.

31. The Department in the normal course of business shall process the application submitted by RC Cape May to modify the Title V operating permit for B.L. England to incorporate the conditions of the preceding paragraph.

IX. FORCE MAJEURE

32. For purposes of this Amendment, a "Force Majeure Event" means (a) an event which causes a delay in performing any requirement of this Amendment, or (b) a unit malfunction which causes RC Cape May to exceed any emission rates specified under this Amendment, which has been or will be caused by circumstances beyond the control of RC Cape May, including any entity controlled by RC Cape May, and which RC Cape May could not have prevented by the exercise of due diligence.

33. If a Force Majeure Event occurs, the RC Cape May shall notify NJDEP in writing as soon as practicable, but in no event later than seven (7) business days following the date RC Cape May first knew, or within ten (10) business days following the date RC Cape May should have known by the exercise of due diligence–whichever comes earlier–that the Force Majeure Event caused or may cause such delay or exceedance. In this notice RC Cape May shall reference this Paragraph and describe the anticipated length of time that the delay or exceedance may persist, the cause or causes of the delay or exceedance, the measures taken or to be taken by the RC Cape May to prevent or minimize the delay or exceedance, and the schedule by which those measures will be implemented. RC Cape May shall adopt all reasonable measures to avoid or minimize such delays or exceedances.

34. NJDEP shall notify RC Cape May in writing regarding its claim of Force Majeure within fifteen (15) business days of receipt of the Force Majeure notice provided under this section.

35. If NJDEP determines that a) a delay or exceedance has been or will be caused by a Force Majeure Event, and b) RC Cape May has taken all necessary actions to prevent or minimize the

delay or exceedance, the Parties shall stipulate to an extension of the required deadline(s) for all requirement(s) affected by the delay or exceedance for a period of time equivalent to the delay actually caused by such circumstances provided, however, that a State or Federal mandate to continue operations shall not toll the deadlines for meeting the Performance Standards set forth in Paragraphs 16-17 of this Amendment.

36. RC Cape May shall not be liable for stipulated civil penalties, or for any exceedance of a 90-Day, 30-Day or 24-Hour emission rate, for a period that shall be equal to any delay caused by a Force Majeure Event under this Section IX.

37. If NJDEP denies RC Cape May's claim that a Force Majeure Event prevented it from meeting the deadlines or Performance Standards as amended herein and set forth in Paragraphs 16-17, RC Cape May must pay the penalties as stipulated in Sections IV and/or V of this Amendment. If NJDEP denies RC Cape May's claim that a Force Majeure Event prevented it from meeting other obligations under this Amendment, RC Cape May may be subject to the stipulated penalties under this Amendment. For any stipulated penalties that RC Cape May may be subject to because of NJDEP's denial of RC Cape May's claim of Force Majeure, RC Cape May may refuse NJDEP's demand for payment of such stipulated penalties and may raise whatever defenses it is otherwise entitled to assert in any action brought by NJDEP to enforce any demand for payment.

38. RC Cape May shall bear the burden of proving that any delay in performing any requirement of this Amendment or any exceedance of a 24-Hour, 30-Day or 90-Day emission rate, as set forth herein, after the deadlines specified in this Amendment was caused by or will be caused by a

Force Majeure Event. RC Cape May shall also bear the burden of proving the duration and extent of any delay or exceedance attributable to a Force Majeure Event. An extension of one compliance date based on a particular Force Majeure Event may, but will not necessarily, result in an extension of a subsequent compliance date.

39. Unanticipated or increased costs or expenses associated with RC Cape May's performance of its obligations under this Amendment shall not constitute a Force Majeure Event. A breach by any of RC Cape May's contractors may, but shall not automatically, constitute a Force Majeure Event.

40. The Parties agree that, depending upon the circumstances related to an event and RC Cape May's response to such circumstances, the kinds of events listed below could also qualify as Force Majeure within the meaning of this Section: acts of God; acts of War; and acts of terrorism.

X. GENERAL PROVISIONS

41. Effective Date: This Amendment shall become effective upon the execution hereof by the Parties.

42. Permit Amendments: Within thirty (45) days of the Effective Date of this Amendment, RC Cape May shall submit to NJDEP a permit modification application to incorporate the requirements, terms and/or conditions made applicable to B.L. England by this ACO Amendment.

43. Meaning of Terms: Terms that are defined in this Amendment Section II ("Definitions") shall have the meaning given to that term therein. Except as provided in the preceding sentence,

terms used in this Amendment that have a definition in applicable State or federal law shall have the same meaning ascribed to them in State or federal law.

44. Other Laws: Nothing in this Amendment shall relieve RC Cape May of its obligation to comply with all applicable federal, state and local laws and regulations. Nothing contained in this Amendment shall be construed to prevent or limit the Department's rights to obtain penalties or injunctive relief under any federal, state or local laws or regulations.

45. Complete Agreement: The January 24, 2006 ACO, the October 31, 2006 Amendment, and this Amendment, constitutes the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in these documents. The Parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in the January 24, 2006 ACO, the October 31, 2006 ACO Amendment, and this Amendment.

46. Notice: Any communication made by NJDEP to RC Cape May pursuant to this Amendment shall be sent to:

Jim Maiz
Rockland Capital, LLC
24 Waterway Avenue
Suite 800
The Woodlands, TX 77380

with a copy to:

Gindy Eckel Vincent
Pillsbury Winthrop Shaw Pittman
2 Houston Center
909 Fannin Street
20th Floor
Houston, TX 77010

When this Amendment requires written notification to or written communication with NJDEP, such written notification or written communication shall be provided to:

Richelle Wormley, Manager
Air Compliance & Enforcement
Southern Regional Office
One Port Center, 2 Riverside Drive, Suite 201
Camden, New Jersey 08103

with a copy to:

Kevin Auerbacher, Section Chief
Environmental Enforcement
R.J. Hughes Justice Complex
25 Market Street
P.O. Box 093
Trenton, New Jersey 08625-0093

Each party reserves its right to change either the notice recipient or the address for providing notices to it by providing the other parties with a written notice setting forth such new notice recipient or address.

47. Signatories and Counterparts: Each undersigned representative of RC Cape May certifies that he or she is fully authorized to enter into and to execute the terms and conditions of this Amendment and legally bind the entity for which he or she signs. Each undersigned representative of NJDEP represents that he or she is fully authorized to enter into the terms and conditions of this Amendment and legally bind NJDEP. This Amendment may be executed in counterparts, each of which shall be deemed an original as to any party having executed it, but all of which together shall constitute one and the same document.

FOR RC CAPE MAY HOLDINGS, LLC

DATED: _____

BY: _____

NAME: _____

TITLE: _____

FOR NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DATED: JAN. 13, 2010

BY: _____

NAME: _____

TITLE: ASSISTANT COMMISSIONER

FOR RC CAPE MAY HOLDINGS, LLC

DATED: January 13, 2010

BY: [signature]

NAME: James L. Maiz

TITLE: Sr. Vice President

FOR NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DATED: _____

BY: _____

NAME: _____

TITLE: _____

Response to Comment Document regarding additional BART Determinations

A notice of opportunity for public comment on New Jersey Department of Environmental Protection's (NJDEP) proposed Best Available Retrofit Technology (BART) determinations for Vineland Municipal Electric Utility and BL England Generating Station was published on August 3, 2011 in the Press of Atlantic City. See Attachment 8. The public notice, Technical Support Document (TSD), and fact sheet (see Attachment 9) were also posted on the NJDEP Air Quality Permitting Program's website under Public Notices. NJDEP also sent written notification of the proposed BART addendum to USEPA Region 2, and electronic notification to the US Fish and Wildlife Service and the US Forest Service.

During the public comment period, comments were received from the Sierra Club and RC Cape May regarding NJDEP's proposed BART determinations with respect to the coal-fired boilers at BL England. The following is a summary of those comments, and NJDEP's responses to those comments.

1) **Comment:** Although agreed that the control technologies (OFA and SCR, wet scrubbers, and ESP) for reducing NO_x, SO_2, and PM emissions from two coal-fired boilers located at BL England represent BART, the corresponding emission limits are too high when compared to the emission levels achieved at similar facilities with coal-fired boilers employing the same types of controls. See letter and Exhibits 1 through 8 posted online at http://www.state.nj.us/dep/baqp/sip/siprevs.htm. NJDEP should require stricter NO_x, SO_2, and PM emission limits in the final BART determinations for BL England Units 1 and 2. NO_x, SO_2, and PM emission limits should be no higher than 0.050 lbs/MMBtu (30-day rolling average), 0.060 lbs/MMBtu (24-hour block average), and 0.010 lb/MMBtu (3-hour average), respectively. **Sierra Club**

   Response: The emission limits proposed above refer to new boiler installations that necessarily incorporate Best Available Control Technology (BACT) as required under the provisions of the New Source Review (NSR) program for Prevention of Significant Deterioration (PSD), and must meet federal performance standards at least as stringent as those published in the New Source Performance Standards subpart D_a. The regional haze rule requires that a level of control determined as Best Available Retrofit Technology (BART) be installed on existing utility boilers that meet certain eligibility criteria.

   For new coal-fired boiler installations, the BACT emission limits would expectedly be more stringent than BART due to better designed, unencumbered and, therefore, more effective controls. BART is contingent upon preexisting design parameters defined by current physical and operational limitations such as type of fuel, equipment configuration, pollution controls already in place, space constraints, availability and location of utilities, and other in-situ considerations that impact the effectiveness of retrofit controls. Also NO_x, SO_2, and particulate emission rates vary depending on the type of coal combusted and the boiler configuration.

In 40 CFR Part 51 Appendix Y "Guidelines for BART Determinations Under the Regional Haze Rule," EPA establishes a presumptive NO_x emission level of 0.10 lbs/MMBtu based on SCR retrofit control of cyclone units burning bituminous coal, and SO_2 emission limits of 95% control or 0.15 lbs/MMBtu, for boilers greater than 200 MW at 750 MW power plants. BL England Units 1 and 2 (129 and 160 MW, respectively) are existing cyclone-type, wet bottom boilers that combust blended coal including bituminous and low sulfur coal. Although less than 200 MW each and located at a power plant less than 750 MW, these boilers are subject to NO_x and SO_2 emission levels equal to EPA's presumptive limits. NJDEP has determined that the control technologies (OFA and SCR, wet scrubbers for Unit 2 and dry scrubbers for Unit 1, and ESP) for reducing NO_x, SO_2, and PM emissions from Units 1 and 2 are BART, and that the corresponding emission limits are appropriate.

2) **Comment:** RC Cape May requests that BL England Unit 1 be granted grandfathered status and be removed from NJDEP's list of BART-eligible sources based on new documentation compiled and evaluated by a project manager of power generation facilities including construction schedules and other supporting documents. Also RC Cape May notes that there is confusion concerning the phrases "in place," "in existence," and "in operation" as used by the Clean Air Act, USEPA's Appendix Y Guidelines, and NJDEP's Technical Support Document. See letter and attachments posted online at http://www.state.nj.us/dep/baqp/sip/siprevs.htm. **Pillsbury, LLP for RC Cape May**

   Response: Whether or not Unit 1 is determined to be BART-eligible doesn't change the stipulations set forth in the ACO Amendment. As stated in the July 25, 2011, Technical Support Document, regardless of whether BART applies, "the enforceable agreements ensure that this unit will meet BART requirements."

Department-initiated Changes

In addition to non-substantive minor and/or stylistic edits (i.e., correcting typos, ensuring consistency, etc.), the NJDEP made the following department-initiated changes when finalizing the July 25, 2011, Technical Support Document and its appendices for the Technical Addendum to Final BART Determinations for submittal to the USEPA:

1) Inserted a qualifier and footnotes regarding identification of BART eligible emission units at power plants listed in Table 1A. In the Regulatory Impact Analysis EPA states that "BART-eligible units were defined as those that were online after August 7, 1962, and under construction prior to August 7, 1977.
2) Added information regarding permit modification (BOP110001) to delete Unit 10 from VMEU's Title V operating permit effective September 1, 2012; and
3) Replaced contents in Attachment 1 with scanned pdf version of original VMEU ACO and cover letter provided by NJDEP Southern Regional Enforcement Office.
4) Corrected the PM averaging basis from 3-hr to 30-day rolling to be consistent with the conditions of the ACO and Title V permit requirements for BL England units 1 and 2.

5) The 2010 ACO amendment requires BL England's unit 2 to meet more stringent NO_x performance standards by May 1, 2012. The effective date shown in Ref.#s 12 and 13 on pages 70 and 71 of the Title V permit, May 1, 2010, is incorrect. The correct date will be incorporated in the permit at the next permit modification, or renewal, whichever is earlier.

NOTICE OF OPPORTUNITY FOR PUBLIC COMMENT ON PROPOSED TECHNICAL ADDENDUM TO THE FINAL BEST AVAILABLE RETROFIT TECHNOLOGY DETERMINATIONS TO PROTECT AND ENHANCE VISIBILITY LEVELS IN NEW JERSEY'S FEDERALLY DESIGNATED CLASS I AREA The New Jersey Department of Environmental Protection (NJDEP) is proposing to approve an addendum to the March 10, 2011, Final Best Available Retrofit Technology (BART) Determinations to include qualified equipment at Vineland Municipal Electric Utility and BL England Generating Station. The federal Clean Air Act requires that regional haze be reduced in national parks and wilderness areas, including the Brigantine Wilderness Area in New Jersey. The BART provisions of the federal Regional Haze Rule require that states identify BART for controlling emissions of haze-causing air pollutants including oxides of nitrogen (NOx), sulfur dioxide (SO2), and particulate matter (PM10), from specific existing sources put in place from 1962 to 1977, and that the appropriate BART emission limitations are included in the State's Implementation Plan to reduce regional haze. All three pollutants, NOx, SO2, and PM10, contribute to regional haze, with SO2 being the greatest contributor. The list of BART-eligible sources identified in the March 10, 2011, BART Technical Support Document (TSD) did not include Vineland Municipal Electric Utility and BL England Generating Station, which were anticipated to permanently shutdown their potentially BART-affected boilers as a result of enforceable agreements that were negotiated concurrent with the BART process. NJDEP has subsequently determined that these facilities are BART-eligible. This notice seeks public comment on NJDEP's determination of BART for these two eligible facilities in New Jersey. The two facilities addressed in the proposed BART addendum are each fossil fuel-fired steam electric generating power plants of more than 250 million BTU/hr heat input with potential NOx, SO2, or PM10 emissions greater than 250 tons per year. Vineland Municipal Electric Utility has a BART-qualified boiler (E10) that is subject to a federal Consent Decree, and proposes to permanently cease operation of E10 by September 1, 2012, which would make this source no longer BART-eligible. BL England is subject to an Administrative Consent Order (ACO) issued by NJDEP that requires the facility to either repower Units 1 and 2 (E1 and E2, respectively) which are coal-fired boilers, or meet the NOx, SO2, and PM performance standards of the ACO through controls. Unit 3 (E3) is a No.6 oil-fired boiler that is required to meet newer rule requirements for NOx emissions and sulfur content in fuel. BL England Generating Station is subject to New Jersey rules, permits, and enforcement agreements that require air pollution controls which meet the BART requirements. This public notice, a fact sheet, and the Technical Support Document for these additional BART determinations have been posted at the Air Quality Permitting website: http://www.state.nj.us/dep/aqpp/publicnotices.htm. Copies of these documents and additional information on this proposed addendum to NJDEP's BART determinations can be obtained by calling Margaret Gardner (609-292-7095). The March 10, 2011, Final Best Available Retrofit Technology (BART) Determinations for Affected BART-eligible Sources and the July, 2009, State Implementation Plan for Regional Haze can be found online at: http://www.state.nj.us/dep/baqp/sip/siprevs.htm. All interested parties, including the affected facilities, who believe that any condition of the proposed BART addendum is inappropriate, must raise all reasonable issues of concern and submit all arguments and factual grounds or materials supporting their position during the public comment period. Any comments on this proposed BART determination and/or a request for public hearing must be received within thirty days of the date of this notice and addressed to: Margaret Gardner New Jersey Department of Environmental Protection Air Quality Permitting Program Bureau of Air Permits 401 East State St. - 2nd Floor, PO Box 420, Mail Code 401-02 Trenton, NJ 08625-0420 (609) 292-7095 NJDEP will consider and respond to all written and timely submitted comments. Each person, who submitted written comments, will receive a notice of the NJDEP's final decision regarding the proposed addendum to NJDEP's BART determinations and a copy of the Response to Comment document. Printer Fee: $80.37 #0090665352 Pub Date: August 3, 2011

Ad# 25551239 posted on Aug 02, 2011
http://www2.pressofac.com/classifieds/ads/25551239/

Proposed Addendum to NJDEP's Best Available Retrofit Technology (BART) Determinations

BART Background Information

1) Federal Clean Air Act (CAA) requirement – reduce haze in scenic areas nationwide
   a) Brigantine Wilderness Area of the Edwin B. Forsythe National Wildlife Refuge - federally designated Class I Area
2) United States Environmental Protection Agency (USEPA) BART rule – requires certain types of existing sources install BART to reduce emissions of haze-causing air pollutants.[1]
3) BART eligibility
   a) Determination of BART eligible sources
      i) 26 source categories (including fossil-fuel fired steam electric plants of more than 250 MMBtu/hr heat input that generate electricity for sale);
      ii) Equipment put in place August 7, 1962 through August 7, 1977; and
      iii) Potential to emit NO_x, SO_2, or PM_{10} greater than 250 tpy aggregated from qualified equipment plant-wide
4) Subject to BART
   a) Eligible sources are subject to BART review (MANE-VU recommendation)
      i) Identify best retrofit system of continuous emission control technology for qualified units, and establish emission limit representing BART
      ii) Compliance within five years of USEPA Region 2 approval (anticipated by 12/31/2016)

Additional BART Determinations

1) NJDEP submitted its BART determinations to the USEPA Region 2 on March 2, 2011[2] as a supplement to its July, 2009, State Implementation Plan (SIP) Revision for Regional Haze[3]
2) USEPA Region 2 identified three additional Electric Generating Units (EGUs) at two facilities that were potentially BART eligible
   a) Vineland Municipal Electric Utility (VMEU) – Howard M. Down, Unit 10 (Vineland, Cumberland County)

[1] http://www.epa.gov/fedrgstr/EPA-AIR/2005/July/Day-06/a12526.pdf
[2] http://www.state.nj.us/dep/baqp/sip/BART%202011_1.pdf
[3] http://www.state.nj.us/dep/baqp/2008%20Regional%20Haze/Regional%20Haze.html

b) BL England Generating Station – RC Cape May, Units 1 & 2 (Beesleys Point, Cape May County)

3) Proposed BART determinations for VMEU and BL England

a) VMEU – Howard M. Down (PI#75507)

i) No.6 fuel oil-fired boiler (E10) – adhere to compliance requirements from the May 20, 2011 Consent Decree (note: VMEU ceased coal operation of E10 in 2010)

(a) permanently cease operation of this unit by September 1, 2012, in lieu of installing selective non-catalytic reduction for NO_x control of E10

(b) on July 29, 2011, VMEU submitted an application to NJDEP requesting removal of E10 from its Title V operating permit effective September 1, 2012

b) BL England Generating Station (PI#73242)

i) Coal-fired boiler (E1) – adhere to NO_x, SO_2, and PM controls, emission limits, and averaging times from the 2006 Administrative Consent Order (ACO) and supplemental Amendments by December 15, 2013

(a) NO_x – over fire air (OFA) and install selective catalytic reduction (SCR) to comply with 0.110 lbs/MMBtu (30-day rolling avg.) and 0.150 lbs/MMBtu (24-hr avg.) (permit activity BOP100003)

(b) SO_2 – install dry scrubber to comply with 0.150 lbs/MMBtu (30-day rolling avg.) and 0.250 lbs/MMBtu (24-hr avg.) (permit activity BOP100003)

(c) PM – update existing electrostatic precipitator (ESP) to comply with 0.030 lbs/MMBtu (3-hr avg.) (permit activity BOP100003)

ii) Coal-fired boiler (E2) – adhere to SO_2, and PM controls, emission limits, and averaging times from the 2006 Administrative Consent Order (ACO) and supplemental Amendments by May 1, 2010, and NO_x by May 1, 2012.

(a) NO_x – install SCR to comply 0.100 lbs/MMBtu (30-day avg.); 0.150 lbs/MMBtu (24-hr avg.) by May 1, 2012 (permit activity BOP100003)

(b) SO_2 – wet scrubber to comply with 0.150 lbs/MMBtu (30-day avg.) and 0.250 lbs/MMBtu (24-hr avg.) Effective (permit activity BOP080001)

(c) PM – update existing electrostatic precipitator (ESP) to comply with 0.030 lbs/MMBtu (3-hr avg.) Effective (permit activity BOP080001)

iii) No. 6 fuel oil-fired boiler (E3) – adhere to existing PM controls, emission limits, and averaging times in the Title V operating permit, and newer NO_x and SO_2 allowable emission limits as shown below

(a) NO_x – existing selective non-catalytic reduction (SNCR); comply with revised maximum allowable NO_x emission rate, 2.0 lb/MW-hr, by May 1, 2015

(b) SO_2 – combust lower sulfur fuel oil, 0.5% by wt, effective July 1, 2014

(c) PM – continue operation of mechanical cyclone to comply with existing allowable emission limit.

iv) Fuel handling systems (E9, E10, E12, E13, E14, E15, E16, E19, and E20) - adhere to existing PM controls, emission limits, and averaging times in the Title V operating permit

(a) PM only – coal unloading, processing, and transferring systems are covered, and with the exception of E15, E19 and E20, fugitive particulate emissions are controlled with surfactant-based wet suppression

v) Cooling tower (E21) – adhere to existing PM controls, emission limits, and averaging times in the Title V operating permit

(a) PM only – natural draft cooling tower circulates treated sea water in a closed loop system and is equipped with high efficiency drift eliminators

NOTE: RC Cape May, owner/operator of this power plant, has indicated it is evaluating the conversion of all three electric steam generating units to natural gas or No. 2 fuel oil. To the extent that RC Cape May decides to convert one or all of the units, NJDEP anticipates that RC Cape May would submit a specific proposal that addresses applicable requirements including BART.

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT of ENVIRONMENTAL PROTECTION

Division of Air Quality
Bureau of Air Permits
401 E. State Street, 2nd floor, P.O. Box 27
Trenton, NJ 08625-0027

BOB MARTIN
Commissioner

Air Pollution Control Operating Permit
Significant Modification and Preconstruction Approval

Permit Activity Number: BOP100003 **Program Interest Number: 73242**

Mailing Address	Plant Location
James Maiz Sr. VP RC Cape May Holdings LLC 24 waterway Ave - Ste 800 Woodlands, TX 77380	B L ENGLAND GENERATING STATION 900 N Shore Rd Upper Twp Cape May County, New Jersey

Initial Operating Permit Approval Date: **December 30, 2005**
Significant Modification Approval Date: **December 16, 2010**
Operating Permit Expiration Date: **December 29, 2010**

This significant modification is approved and issued under the authority of Chapter 106, P.L. 1967 (N.J.S.A. 26:2C-9.2). The equipment at the facility must be operated in accordance with the requirements of this permit.

This approval, in response to your application, merges the provisions of the previously approved operating permit and the changes from this significant modification into a single comprehensive permit that replaces the one previously issued. This significant modification incorporates changes to compliance plan for emission unit, U1, and U2 per Amendments to ACO.

Equipment at the facility referenced by this significant modification **is covered by** the permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. However, this permit shield does not cover physical changes which were undertaken at the facility after March 3, 2003 and for which the facility did not seek an applicability determination for the Prevention of Significant Deterioration rule, codified at 40 CFR 52.21 (PSD), from the United States Environmental Protection Agency (USEPA). The issuance of this permit should not in any way be construed as a determination by the Department that the PSD rules do not apply. Any questions on applicability of PSD should be directed to USEPA Region II, Air Programs Branch, 21st Floor, 290 Broadway, New York, NY 10007-1866 (Phone: 212-637-4074). Pursuant to N.J.A.C. 7:27-22.33(e), this significant modification consists of both a preconstruction approval and operating permit approval. This operating permit does not include compliance schedules as part of the approved compliance plan.

The permittee shall submit to the Department and to the EPA on forms provided by the Department, at the addresses given below, a periodic compliance certification, in accordance with N.J.A.C. 7:27-22.19 and the schedule for compliance certifications set forth in the compliance plan in this operating permit. The annual compliance certification reporting period will cover the calendar year ending December 31. **The annual compliance certification is due to the Department and the EPA within 60 days after the end of each calendar year during which this permit was in effect.** Forms provided by the Department can be found on the Department's website at: http://www.nj.gov/dep/enforcement/compliancecertsair.htm.
The annual compliance certification report may also be considered as your six month deviation report for the period from July 1 through December 31 which is due by January 30 of each year, as required by paragraph 13 in Section F, *General Provisions and Authorities,* of this permit, if the annual compliance certification is submitted by January 30.

New Jersey Department of Environmental Protection
Air & Environmental Quality Compliance & Enforcement
401 East State Street, P. O. Box 422
Trenton, New Jersey 08625-0422

United States Environmental Protection Agency, Region II
Air Compliance Branch
290 Broadway
New York, New York 10007-1866

New Jersey Department of Environmental Protection
Air and Environmental Quality Compliance & Enforcement
Southern Regional Enforcement Office
One Port Center, 2 Riverside Drive
Camden, New Jersey 08103

Your facility's current approved operating permit and any previous versions (e.g. superseded, expired, or terminated) are now available for download in the PDF format at: http://www.nj.gov/dep/aqpp/. After accessing the website, click on "Approved Operating Permits" listed under "Reports" and then type in the Program Interested (PI) Number as instructed on the screen. A RADIUS file for your permit, containing Facility Specific Requirements (Compliance Plan), Inventories, and Compliance Schedules (if needed), can be obtained by contacting your permit writer. Upon importing this information into your personal computer with RADIUS software, you will have up-to-date information in RADIUS format. RADIUS software, instructions, and help are available at the Department's website at www.state.nj.us/dep/aqpp. We also have an Operating Permit Help Line available from 9:00 AM to 4:00 PM daily, where you may speak to someone about any questions you may have. The Operating Permit Help Line number is 609-633-8248.

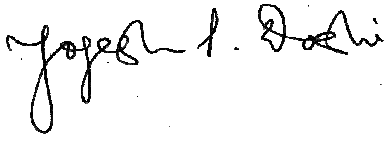
If, in your judgment, the Department is imposing any unreasonable condition of approval in this permit_modification action, you may contest the Department's decision on the modification and request an adjudicatory hearing pursuant to N.J.S.A. 52:14b-1 et seq. and N.J.A.C. 7:27-22.32(a). All requests for an adjudicatory hearing must be received in writing by the Department within 20 calendar days of the date you receive this letter. The request must contain the information requested in N.J.A.C. 7:27-1.32 and the information on the enclosed Administrative Hearing Request Checklist and Tracking Form.

The permittee is responsible for submitting a timely and administratively complete operating permit renewal application. The application is considered timely if it is received at least 12 months before the expiration date of the operating permit. To be deemed administratively complete, an application for renewal of the operating permit shall include all of the information required by the application form for the renewal and the information required pursuant to N.J.A.C. 7:27-22.30(d). However, consistent with N.J.A.C. 7:27-22.30(c), the permittee is encouraged to submit the renewal application at least 15 months prior to expiration of the operating permit, so that the Department can notify the applicant of any deficiencies in the application. This will allow the permittee to correct any deficiencies, and to better ensure that the application is administratively complete by the renewal deadline. Only applications which are timely and administratively complete will be eligible for coverage by an application shield. The renewal application can be found at our website, http://www.state.nj.us/dep/aqpp/downloads/forms/OPRenewal.PDF.

Permittees that are subject to Compliance Assurance Monitoring (CAM), pursuant to 40 CFR 64, shall develop a CAM Plan for modified equipment as well as existing sources. Details of the rule and guidance on how to prepare a plan can be found at EPA's website: www.epa.gov/ttn/emc/cam.html. In addition, CAM Plans must be included as part of the permit renewal application. Permittees that do not submit a CAM Plan may have their modification applications denied, pursuant to N.J.A.C. 7:27-22.3.

If you have any comments or questions regarding this permit approval, please call your permit writer, Piyush Desai, at (609) 292-1313.

Approved by:



_____
Yogesh Doshi
Air Quality Permitting Element

Enclosure
CC: S. Riva, USEPA Region II
R. Wormley - SRO (w/o enclosure)]
P. Desai (w/o enclosure)
A. Shawl (w/o enclosure) – B. L. England –
900 North Shore Road,
Marmora, NJ 08223

New Jersey Department of Environmental Protection
Facility Specific Requirements

Subject Item: **GR2 U2 CDs requirements are listed.**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Applicable RACT requirements are listed in the group GR1. Requirements listed under GR1 are in effect before and after the installation and operation of SCR. Applicable control devices requirements are listed in the group GR2. Applicable requirements for hourly emission limits for HAPs and other pollutants are listed in GR4. Requirements listed under these groups are applicable to U2, OS1 - OS5. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
2	Nitrogen oxides emissions shall be controlled by selective non-catalytic reduction and overfire air dampers. Use of SNCR is optional after installation and operation of SCR. [N.J.A.C. 7:27-22.16(a)]	Monitored by continuous emission monitoring system continuously for the NOx concentration in the flue gas; and process monitoring system, continuously, for ammonia. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]	None.
3	Sulfur dioxide emissions shall be controlled by limestone forced oxidation flue gas desulfurization scrubber system. [N.J.A.C. 7:27-22.16(e)]	Monitored by continuous emission monitoring system continuously. If a continuous emission monitor system for SO2 on the inlet of the scrubber system malfunctions while Unit 2 is burning coal, and the outage lasts longer than 24 hours, then starting on the 24th hour and every three hours thereafter, B. L. England Station shall sample the coal fired to the unit not being continuously monitored for SO2 emissions, composite the samples taken each day into a daily sample, and analyze the daily coal sample for sulfur content according to ASTM methods D2013, D3172, D3177, and D3180. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. An operation, inspection and maintenance plan for the scrubber system shall be maintained at the facility. [N.J.A.C. 7:27-22.16(e)]	None.
4	Urea: When the SNCR (CD5) system is operating, daily records of urea usage shall be maintained. [N.J.A.C. 7:27-22.16(a)]	Monitored by material feed/flow monitoring continuously. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Maintain daily urea usage records per day. [N.J.A.C. 7:27-22.16(o)]	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
5	Particulate emissions from Unit #2 cyclone boiler shall be controlled by electrostatic precipitator during all times when the unit is operating. [N.J.A.C. 7:27-22.16(e)]	Monitored by continuous opacity monitoring system continuously, based on an instantaneous determination. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]	None.
6	The electrostatic precipitator (ESP) must operate at all times when Unit 2 is burning coal. The ESP need not be energized when operating with only No. 6 fuel oil. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~7~~	~~Design Retention time for ESP is 10.59 seconds. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~8~~	~~Minimum apparent Migration design velocity for ESP is 15.3 feet per minute [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~9~~	~~Design Number of plate is 312, fields 16 and total plate surface area for ESP is 265,392 sq.ft. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~	~~None.~~	~~None.~~
~~10~~	~~Maximum design gas velocity across the ESP shall be 60 Feet per second. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
11	Particulate design removal eficincy for ESP shall be no less than 98.6%. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~12~~	~~Design Aspect Ratio for ESP shall be maintained at 41. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~13~~	~~Opacity: During periods of Continuous Opacity Monitoring System (COMS) downtime, the permittee will maintain the Current to T/R Set >=0 and <= 34 KW for CD3.~~ ~~There is no violation if the continuous monitoring shows compliance with emission limits but these surrogate parameters are out of the stated range. [N.J.A.C. 7:27-22.16(a)]~~	~~Opacity: Monitored by volt meter continuously during periods of COMs downtime. [N.J.A.C. 7:27-22.16(o)]~~	~~Opacity: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously during periods of COMs downtime. Record Voltage. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~14~~	~~Temperature at Reagent Injection Point: During periods of NOx Continuous Emissions Monitoring System (CEMS) downtime, the permittee will maintain the temperature at Reagent Injection Point between >= 1900 and <= 2600 degrees F for CD5. There is no violation if the continuous monitoring shows compliance with emission limits but these surrogate parameters are out of the stated range. This requirement applies to SNCR. [N.J.A.C. 7:27-22.16(a)]~~	~~Temperature at Reagent Injection Point: Monitored by temperature instrument continuously during the periods of CEMs downtime. [N.J.A.C. 7:27-22.16(o)]~~	~~Temperature at Reagent Injection Point: Recordkeeping by strip chart or data acquisition (DAS) system continuously during the periods of CEMs downtime. Reagent Injection Point temperature is measured and recorded. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~15~~	~~When burning coal, Unit 2 shall emit no more than 10% of the annual SO2 emissions that would result from burning coal without controls, based on the actual amount of coal burned per year and the 2.6 % annual average coal sulfur content. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by continuous emission monitoring system continuously and by calculations based on the coal sulfur content data and quantity of coal burned in Unit 2. Determining compliance with this annual limit shall not consider SO2 emissions or coal burned during periods of boiler start-up and shutdown or during periods when an affected scrubber system is out of service for maintenance or to correct a scrubber system malfunction, or during periods when fuel oil is being burned. [N.J.A.C. 7:27-22.16(e)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously and manual logging of operating parameters in a log book. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
16	The electrostatic precipitator shall be operated and maintained in accordance with the manufacturer's recommendations as amended by retrofit technology. ESP will be updated to meet ACO requirements. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~17~~	~~Pressure Drop: During periods of SO2 Continuous Emission Monitoring System (CEMS) downtime, the permittee will maintain Pressure Drop Across FGD >= 3 and <= 6 inches H2O for CD4. There is no violation if the continuous monitoring shows compliance with emission limits but these surrogate parameters are out of the stated range. [N.J.A.C. 7:27-22.16(a)]~~	~~Pressure Drop: Monitored by pressure drop instrument continuously during periods of CEMs downtime. [N.J.A.C. 7:27-22.16(o)]~~	~~Pressure Drop: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously during periods of CEMs downtime. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
18	Following references will be in effect from May 1, 2012, after installation and operation of SCR control device. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~19~~	~~The permittee shall replace the catalyst bed as necessary to ensure that NOx emissions do not exceed the maximum permit allowable emission rate. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~20~~	~~Temperature at Catalyst Bed >= 600 and Temperature at Catalyst Bed <= 800 degrees F for CD17. The permittee shall not be considered in violation for any deviation from this requirement if corresponding NOx emissions are in compliance with applicable emission limits as established in this permit. [N.J.A.C. 7:27-22.16(a)]~~	~~Temperature at Catalyst Bed: Monitored by temperature instrument continuously, based on an instantaneous determination. The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications. The monitor(s) shall be ranged such that the allowable value is approximately mid-scale of the full range current/voltage output. [N.J.A.C. 7:27-22.16(o)]~~	~~Temperature at Catalyst Bed: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~21~~	~~Ammonia: When the SCR system is operating, daily records of aqueous ammonia usage shall be maintained Applies to CD17. [N.J.A.C. 7:27-22.16(a)]~~	~~Ammonia: Monitored by material feed/flow monitoring continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~Ammonia: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Maintain daily aqueous ammonia usage records per day. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~22~~	~~B.L. England may inject sorbent as necessary for control of H2SO4 emissions. If SO3 reagent is needed, the acceptable minimum slurry injection rate into the boiler will be determined through stack testing upon commencement of operation after the addition of the SCR. Applies to CD16. [N.J.A.C. 7:27-22.16(a)]~~	~~Monitored by material feed/flow monitoring continuously, based on a 1 hour block average. [N.J.A.C. 7:27-22.16(o)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
23	The electrostatic precipitator, flue gas desulfurization, SCR, and Sorbent injection system, (CD3, CD4, CD16, CD17, and CD200), shall be operated at all times that the Boiler, Unit#2 is operating, except during start-up and shutdown. SNCR (CD5) can be operated as needed, based on MM 080001 application. [N.J.A.C. 7:27-22.16(a)]	Other: The permittee shall record the time and duration of the operation of all CD's listed in the applicable requirement.[N.J.A.C. 7:27-22.16(o)].	Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. Record the time and duration of the operation of the unit#2 and the CDs listed in the applicable requirement in a log book. [N.J.A.C. 7:27-22.16(o)]	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
24	Selective Catalytic Reduction (SCR - CD17): NOx Percentage Removal >= 90 % (design value). The permittee shall not be considered in violation for any deviation from this requirement if corresponding NOx emissions from the unit#2 boiler are in compliance with applicable emission limits as established in this permit. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by manual logging of parameter or storing data in a computer data system at the approved frequency. The permittee shall keep SCR manufacturer's documentation, as-built performance guarantee and operation and maintenance manual on-site. [N.J.A.C. 7:27-22.16(o)]	None.
~~25~~	~~Ammonia Slip <= 10 ppmvd @ 7% O2. Maximum concentration value from 080001 minor modification application. [N.J.A.C. 7:27-22.16(a)]~~	~~Ammonia Slip: Monitored by parametric monitoring system continuously, based on a 1 hour block average. [N.J.A.C. 7:27-22.16(o)]~~	~~Ammonia Slip: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]~~
~~26~~	~~Ammonia Slip <= 10 ppmvd @ 7% O2. Maximum concentration value from 080001 minor modification application. [N.J.A.C. 7:27-22.16(a)]~~	~~Ammonia Slip: Monitored by stack emission testing annually, based on the average of three Department validated stack test runs. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref. #1. [N.J.A.C. 7:27-22.16(o)]~~	~~Ammonia Slip: Recordkeeping by stack test results annually. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref. #1. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: Annually. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref. #1. [N.J.A.C. 7:27-22.16(o)]~~
27	Nitrogen oxides emissions shall be controlled by SCR and/or SNCR technology and overfire air dampers. [N.J.A.C. 7:27-22.16(a)]	Monitored by continuous emission monitoring system continuously for the NOx concentration in the flue gas. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]	None.
~~28~~	~~Concentration of Reagent in Solution < 20 %. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Bills of lading or invoices per each delivery.[N.J.A.C. 7:27-22.16(o)].~~	~~Concentration of Reagent in Solution: Recordkeeping by invoices / bills of lading / certificate of analysis per delivery. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U1 Unit 1 Steam Generator**
Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Conduct comprehensive stack testing at emission point, PT1, as follows: For coal firing, stack tests for criteria pollutants (TSP & PM-10), heavy metals (As, Be, Cd, Cu, Cr, Co, Pb, Mn, Hg, Ni), ammonia (NH3) and acid gases (H2SO4, HCl & HF) shall be conducted annually to demonstrate compliance with the emission limits. The first of the annual stack tests must be conducted within 180 days from the date of the approved initial operating permit (IOP). Additionally, while coal firing, conduct stack test for criteria pollutants (TSP, PM-10, NOx, CO, VOC, SO2), heavy metals and acid gases as listed above, non-metals (Se), total dioxins/furans, PAH, and POM within 42 months from the date of the approved IOP. Three consecutive stack testing runs shall be conducted with unit operating at between 90 -100% of maximum heat input. Heat input (MMBtu/hr, HHV) shall be determined for each stack test. The permittee shall conduct any additional stack emission testing for the pollutants for which an emission limit has been set in Section J, Facility Specific Requirements, of Title V IOP, or any other air pollutants potentially emitted by the station, upon request by the Department. After December 15, 2007, during the interim period when Unit 1 will operate on a limited basis in accordance with the Administrative Consent Order, Unit 1 will not be required to have stack testing performed. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing at the approved frequency, based on any 60 minute period. Stack testing shall be conducted for TSP, PM-10, NOx, SO2, CO, VOC, and HAPs and other air contaminants, as applicable. (See Applicable Requirement). Permanent sampling and testing facilities shall be provided as required by the Department to determine the nature and quantity of emissions from the boilers. Such facilities shall conform to all applicable laws and regulations concerning safe construction or safe practices. [N.J.A.C. 7:27-22.16(e)] &. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results at the approved frequency [N.J.A.C. 7:27-22.16(e)] &. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 60 days from the date of the approved IOP. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. See Applicable Requirement for test schedules. The stack test report must be submitted to BTS within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a New Jersey licensed professional engineer or certified industrial hygienist. POM analytical results must be submitted to BTS within 90 days after performing the stack test. A copy of the test results must be submitted with the OP renewal application due at least 12 months prior to expiration of the OP. Test results shall report lb/hr, lb/MMBTU(HHV), ng/dscm for total dioxins/furans, PAH, and POM, and ppmvd @ 7% O2 except for particulate matter, dioxins/furans, PAH, and POM. Emissions of the following 16 POM constituents shall be speciated and reported: napthalene, acenaphthene, acenaphthylene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(ghi)perylene, benz(a)anthracene, chyrsene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, and indeno(1,2,3-cd) pyrene. [N.J.A.C. 7:27-22.16(e)] & [N.J.A.C. 7:27-22.18(e)] &. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	The permittee shall operate and maintain continuous emission monitors and continuous data recorders to measure and record the concentration of O2, nitrogen oxides (as NO2), SO2, and CO in accordance with a protocol approved by the Chief, BTS. [N.J.A.C. 7:27-22.16(e)]	Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken. When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report. EEMPR forms are available from REO. [N.J.A.C. 7:27-22.16(e)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]
~~4~~	~~The permittee shall operate and maintain a continuous opacity monitor and continuous data recorder to measure and record the opacity after ESP on Unit #1 in accordance with a protocol approved by the Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken. When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report. EEMPR forms are available from REO. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~
~~5~~	~~The permittee shall operate and maintain continuous monitor and recorder, approved by the Chief, BTS, in Unit #1 flue to monitor and record the flue gas volumetric flow rate. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
~~6~~	~~The permittee shall not rely on the use of intermittent emission control strategies such as throttling back steam production, or other dispersion techniques as defined at 40 CFR Part 51.1(h), as a means of demonstrating compliance with the ambient air quality standards specified at N.J.A.C. 7:27-13. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~7~~	~~The permittee shall submit a quarterly excess emissions and monitoring systems performance report (EEMPR) to the Chief, REO, and Chief, BTS, within thirty (30) days of the close of each calendar quarter.~~ ~~[N.J.A.C. 7:27-22.16(e)]~~	~~Other: Monitored by continuous emission monitors, continuous opacity monitor, continuous flue gas flow monitor, and continuous data recorders. Equipment specification, calibration and operating procedures, and data evaluation and reporting procedures shall be approved by the Chief, BTS.[N.J.A.C. 7:27-22.16(e)].~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously or manual logging of parameter in a log book.~~ ~~Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken.~~ ~~When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report.~~ ~~EEMPR forms are available from REO.~~ ~~[N.J.A.C. 7:27-22.16(e)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~
8	TSP <= ~~569.4 tons/yr. Annual limit based on preconstruction permit is in effect until December 14, 2013.~~ Annual limit of 170.8 tons/yr, based on SM100003 application, will be in effect from December 15, 2013. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~9~~	~~PM-10 (Total) <= 1,198.34 tons/yr. Based on stack test results. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~10~~	~~Annual limit based on preconstruction permit, VOC (Total) <= 70.08 tons/yr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
11	NOx (Total) <= ~~4,080.7 tons/yr. Annual limit based on preconstruction permit is in effect until December 14, 2013.~~ Annual limit of 626.3 tons/yr, based on SM100003 application, will be in effect from December 15, 2013. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~12~~	~~Annual limit based on preconstruction permit, CO <= 438 tons/yr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
13	SO2 <= ~~31,457.16 tons/yr. Annual limit based on preconstruction permit is in effect until December 14, 2013.~~ Annual limit of 854.1 tons/yr, based on SM100003 application, will be in effect from December 15, 2013. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U1 Unit 1 Steam Generator**

Operating Scenario: **OS1 Unit 1 Firing Blended Coal with up to 8% Tire Derived Fuel (TDF) or #6FO Operating with ESP, SNCR & OFA**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Opacity <= 20 %. No visible emissions greater than 20% opacity, exclusive of visible condensed water vapor, except for a period of time of not longer than three (3) minutes in any consecutive 30-minute period. [N.J.A.C. 7:27-3.2(a)] & [N.J.A.C. 7:27-3.2(e)] &. [N.J.A.C. 7:27-22.16(e)]	Opacity: Monitored by continuous opacity monitoring system continuously, based on any consecutive 30-minute period. If the opacity measured at the monitor exceeds the limit specified in the Applicable Requirement, the permittee shall take action to reduce opacity to below that limit. [N.J.A.C. 7:27-22.16(e)]	Opacity: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]	Submit notification: As per the approved schedule , the facility shall report to the Chief, REO, in writing within three (3) working days after the event of any opacity exceedance. . [N.J.A.C. 7:27-22.16(e)]
2	Maximum allowable emission rate of particles based on heat input rate (MMBtu/hr), Particulate Emissions <= 130 lb/hr. [N.J.A.C. 7:27- 4.2(a)]	Particulate Emissions: Monitored by stack emission testing annually, based on any 60 minute period. Refer to stack testing requirements for TSP specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-4.4] &. [N.J.A.C. 7:27-22.16(e)]	Particulate Emissions: Recordkeeping by stack test results annually. Refer to stack testing requirements for TSP specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements for TSP specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]
3	Sulfur Content in Fuel <= 2 % by weight. Maximum allowable sulfur content in fuel oil grades/viscosity and geographical zone. [N.J.A.C. 7:27- 9.2(b)]	Sulfur Content in Fuel: Monitored by fuel sampling (e.g. oil) at the approved frequency, based on the averaging period as per Department approved test method. The permittee shall sample oil received at the station by collecting one (1) sample per month from each of the on-site tanks in accordance with ASTM Method D4507. The sulfur content of No. 6 fuel oil samples shall be determined using ASTM Method D1552. [N.J.A.C. 7:27-22.16(e)]	Sulfur Content in Fuel: Recordkeeping by certified lab analysis results quarterly: once per quarter; quarters shall begin on January 1, April 1, July 1, and October 1 of each year. The permittee shall keep operating logs to accurately maintain records of the date received, supplier's name and address, quantity received, and mean sulfur content of each shipment of oil received at the station. [N.J.A.C. 7:27-22.16(e)]	Submit a report: Annually to the Chief, REO. Within thirty (30) days from the end of each calendar year, the permittee shall report the sulfur content of oil for each calendar quarter in writing to the Chief, Southern Regional Enforcement Office. [N.J.A.C. 7:27-22.16(e)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
7	Adjust the combustion process in accordance with N.J.A.C. 7:27-19.16 by May 1 of each calendar year. An exceedance of an emission limit which occurs during an adjustment of the combustion process, as a result of the adjustment, is not a violation of this permit. Before the combustion process adjustment begins, and after it has been completed, the maximum emission rate of NOx shall not exceed the maximum allowable emission rate specified in this approval. [N.J.A.C. 7:27-16.8(b)3]	Monitored by continuous emission monitoring system continuously , or periodic emission monitoring (portable instrument), annually, and inspection. The owner or operator of the equipment or source operation shall: 1. Inspect the burner, and clean or replace any components of the burner as necessary to minimize total emissions of NOx and CO; 2. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern; and 3. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly. [N.J.A.C. 7:27-19.16(a)] &. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously and manual logging of pararmeter, annually. The owner/operator of the adjusted equipment or source operation shall record each adjustment conducted under N.J.A.C. 7:27-19.16(a) in a log book or other format approved in writing by the Department, containing the following information for each adjustment: 1.The date of adjustment and the times at which it began and ended; 2.The name, title, and affiliation of the person who made the adjustment; 3.The NOx concentration in the effluent stream, in either ppmdv or ppmv, after each adjustment was made; 4.The CO concentration in the effluent stream, in either ppmdv or ppmv, after each adjustment was made; 5.The concentration of O2 at which the CO and NOx concentrations were measured; and 6. Any other information which the Department or the EPA has required as a condition of approval of any permit or certificate issued for the equipment or source operation. [N.J.A.C. 7:27-19.16(c)]	None.
~~8~~	~~When combusting fuel oil, the owner or operator of a cyclone-fired wet bottom utility boiler shall cause it to emit NOx at a rate no greater than the applicable maximum allowable NOx emission rate specifed in Table 1.~~ ~~Maximum allowable NOx emission rate for oil, NOx (Total) <= 0.43 lb/MMBTU. [N.J.A.C. 7:27-19.4(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on one calendar day average between May 1 and September 30, and a 30-day rolling average (rolling 1-day basis) from October 1 through April 30; and flue gas flow monitor and/or fuel flow instrument, continuously. [N.J.A.C. 7:27-19.4(a)]~~	~~NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously and calculations.~~ ~~B. L. England Station shall calculate the average NOx emission rate using the data from the CEM systems for the NOx concentration in the flue gas, and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NOx concentration and the fuel flow rate, B. L. England Station shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR Part 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-19.4(a)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~9~~	~~NOx (Total) <= 0.6 lb/MMBTU. When combusting blended coal, with or without tire-derived fuel, the owner or operator of a cyclone-fired wet bottom utility boiler shall cause it to emit NOx at a rate no greater than the applicable maximum allowable NOx emission rate specifed in Table 1. [N.J.A.C. 7:27-19.4(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on one calendar day average between May 1 and September 30. A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-19.15(a)1i]~~	~~NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. The owner or operator shall calculate the average NOx emission rate using the data from such a system for the NOx concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NOx concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-19.15(a)1i]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal . [N.J.A.C. 7:27-22.16(o)]~~
~~10~~	~~NOx (Total) <= 0.6 lb/MMBTU. When combusting blended coal, with or without tire-derived fuel, the owner or operator of a cyclone-fired wet bottom utility boiler shall cause it to emit NOx at a rate no greater than the applicable maximum allowable NOx emission rate specifed in Table 1. [N.J.A.C. 7:27-19.4(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on a rolling 30 day average (rolling 1 day basis) from October 1 through April 30. A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-19.15(a)1ii]~~	~~NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. The owner or operator shall calculate the average NOx emission rate using the data from such a system for the NOx concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NOx concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-19.15(a)1]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]~~
11	NOx (Total) <= 0.15 lb/MMBTU based on 24 hour rolling average, effective from December 15, 2013. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a daily average. A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously The owner or operator shall calculate the average NOx emission rate using the data from such a system for the NOx concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NOx concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
12	NOx (Total) <= 0.11 lb/MMBTU based on a 30-day rolling average, effective from December 15, 2013. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a rolling 30 day average (rolling 1 day basis). A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously The owner or operator shall calculate the average NOx emission rate using the data from such a system for the NOx concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NOx concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]
~~13~~	~~NOx (Total) <= 341 ppmvd @ 7% O2 , based on 0.60 lb/MMBtu, when combusting blended coal, with or without tire-derived fuel, in a cyclone-fired wet boiler, the maximum allowable NOx concentration rate for coal. [N.J.A.C. 7:27-19.4(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on any 60 minute period and stack emission testing based on the average of three 1- hour tests at the approved frequency. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~NOx (Total): Recordkeeping by strip chart, data acquisition (DAS) system, or other method approved by BTS continuously and stack test results at the approved frequency. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~
~~14~~	~~NOx (Total) <= 780 lb/hr , based on 0.60 lb/MMBtu, when combusting blended coal, with or without tire-derived fuel, in a cyclone-fired wet boiler, the maximum allowable NOx emission rate for coal,. [N.J.A.C. 7:27-19.4(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on any 60 minute period and stack emission testing based on the average of three 1- hour tests at the approved frequency. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously and stack test results at the approved frequency. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~
15	TSP <= 0.03 lb/MMBTU based on a 30-day rolling average, effective from December 15, 2013. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued on January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	TSP: Monitored by stack emission testing annually, based on the average of three Department validated stack test runs. [N.J.A.C. 7:27-22.16(o)]	TSP: Recordkeeping by stack test results annually. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: Annually. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(o)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
16	SO2 <= 0.25 lb/MMBTU based on 24 hour average, effective from December 15, 2013. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued on January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by continuous emission monitoring system continuously, based on a daily average. A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-22.16(o)]	SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. The owner or operator shall calculate the average SO2 emission rate using the data from such a system for the SO2 concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the SO2 concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]
17	SO2 <= 0.15 lb/MMBTU based on a 30-day rolling average, effective from December 15, 2013. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued on January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by continuous emission monitoring system continuously, based on a rolling 30 day average (rolling 1 day basis). A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-22.16(o)]	SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. The owner or operator shall calculate the average SO2 emission rate using the data from such a system for the SO2 concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the SO2 concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]
~~18~~	~~Maximum gross heat input from preconstruction permit, Maximum Gross Heat Input <= 1,300 MMBTU/hr (HHV). [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None~~.
~~19~~	~~Hours of Operation While Firing Coal <= 8,760 hr/yr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~20~~	~~Unit #1 boiler fuels limited to bituminous coal, low sulfur coal, mixed with up to 8% tire-derived fuel (supplemental), or No. 6 fuel oil. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by review of fuel delivery records per delivery. [N.J.A.C. 7:27-22.16(e)]~~	~~Recordkeeping by invoices / bills of lading per delivery. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~23~~	~~The permittee shall analyze sulfur in coal in accordance with protocol approved by the Chief, BTS, using an on-line nuclear cross belt analyzer that provides real time analysis of sulfur in coal conveyed to Unit #1. The nuclear analyzer shall be located and operated on the existing 30 inch coal conveyor belt, #17, before the crusher. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: The precision of the nuclear analyzer for measuring the sulfur content of the feed coal shall be 0.08% or greater at one sigma. The permittee shall check the calibration of the instrument in accordance with a protocol, approved by the Chief, BTS, for the ongoing verification of calibration and performance of the analyzer.[N.J.A.C. 7:27-22.16(e)].~~	~~None.~~	~~None.~~
~~24~~	~~Sulfur Content in Fuel <= 1 % by weight. Based on preconstruction permit, maximum allowable sulfur content of No. 6 fuel oil. [N.J.A.C. 7:27-22.16(a)]~~	~~Sulfur Content in Fuel: Monitored by fuel sampling (e.g. oil) at the approved frequency, based on the averaging period as per Department approved test method. The permittee shall sample oil received at the station by collecting one (1) sample per month from each of the on-site tanks in accordance with ASTM Method D4507. The sulfur content of No. 6 fuel oil samples shall be determined using ASTM Method D1552. [N.J.A.C. 7:27-22.16(e)]~~	~~Sulfur Content in Fuel: Recordkeeping by certified lab analysis results quarterly: once per quarter; quarters shall begin on January 1, April 1, July 1, and October 1 of each year. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit a report: Annually to the Chief, REO. Within thirty (30) days from the end of each calendar year, the permittee shall report the sulfur content of oil for each calendar quarter in writing to the Chief, Southern Regional Enforcement Office. [N.J.A.C. 7:27-22.16(e)]~~
~~25~~	~~Maximum quantity of tire derived fuel (TDF)in total fuel input <= 8% by weight. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~Recordkeeping by manual logging of parameter each month during operation. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
26	Particulate emissions from Unit #1 cyclone boiler shall be controlled by electrostatic precipitator during all times when the unit is operating. [N.J.A.C. 7:27-22.16(e)]	Monitored by continuous opacity monitoring system continuously, based on any consecutive 30-minute period. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]	None.
27	Nitrogen oxides emissions shall be controlled by selective non-catalytic reduction and overfire air dampers. [N.J.A.C. 7:27-22.16(e)]	Monitored by continuous emission monitoring system continuously for the NOx concentration in the flue gas; and process monitoring system, continuously, for ammonia. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]	None.
~~28~~	~~Maximum allowable emission rate based on preconstruction permit, TSP <= 130 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~TSP: Monitored by stack emission testing annually, based on any 60 minute period. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~TSP: Recordkeeping by stack test results annually. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~
~~29~~	~~Maximum allowable emission rate based on stack test results. PM-10 (Total) <= 273.59 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~PM-10 (Total): Monitored by stack emission testing annually, based on each of three Department validated stack test runs. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(o)]~~	~~PM-10 (Total): Recordkeeping by stack test results annually. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U1 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U2 Unit 2 Steam Generator**
Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Conduct comprehensive stack testing at emission point, PT2, as follows: For coal firing, stack tests for criteria pollutants (TSP & PM-10), heavy metals (As, Be, Cd, Cu, Cr, Co, Pb, Mn, Hg, Ni), ammonia (NH3), and acid gases (H2SO4, HCl & HF) shall be conducted annually to demonstrate compliance with the emission limits. The first of the annual stack tests must be conducted within 180 days from the date of the approved initial operating permit. Additionally, while coal firing, conduct stack test for criteria pollutants (TSP, PM-10, NOx, SO2, CO, VOC), heavy metals and acid gases as listed above, non-metals (Se), total dioxins/furans, PAH, and POM within 42 months from the date of the approved Initial Operating Permit. When stack testing, three consecutive runs shall be conducted with unit operating at between 90 -100% of maximum heat input. Heat input (MMBtu/hr, HHV) shall be determined for each stack test. The permittee shall conduct any additional stack emission testing for the pollutants for which an emission limit has been set in Section J, Facility Specific Requirements, of this Initial Title V Operating Permit, or any other air pollutants potentially emitted by the station, upon request by the Department. [N.J.A.C. 7:27-22.16(a)] & [N.J.A.C. 7:27-22.16(e)]	Monitored by stack emission testing at the approved frequency, based on each of three Department validated stack test runs. Stack testing shall be conducted for TSP, PM-10, NOx, CO, VOC & SO2, and HAPs and other air contaminants, as applicable. (See Applicable Requirement). Stack test for TSP and PM10 is annual and for NOx, CO, VOC & SO2 is once per 5-year term. Stack test for HAPs is listed in its corresponding individual applicable requirement. Permanent sampling and testing facilities shall be provided as required by the Department to determine the nature and quantity of emissions from the boilers. Such facilities shall conform to all applicable laws and regulations concerning safe construction or safe practices. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results at the approved frequency [N.J.A.C. 7:27-22.16(e)] &. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 60 days from the date of the approved initial operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. See Applicable Requirement for test schedules. Submit the source emissions test report to BTS, within 90 days after completion of the source emissions testing (N.J.A.C.7:27-22.18(e)(3)], pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a New Jersey licensed professional engineer or certified industrial hygienist. A copy of the test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall report lb/hr, lb/MMBTU(HHV), ng/dscm for total dioxins/furans, PAH, and POM and ppmvd @ 7% O2 except for particulate matter, dioxins/furans, PAH and POM. Emissions of the following 16 POM constituents shall be speciated and reported: napthalene, acenaphthene, acenaphthylene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(ghi)perylene, benz(a)anthracene, chyrsene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, and indeno(1,2,3-cd) pyrene. [N.J.A.C. 7:27-22.16(e)] & [N.J.A.C. 7:27-22.18(e)] &. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	The owner or operator shall develop a QA/QC plan for all CEMS/COMS required by this permit. This QA/QC plan shall incorporate at a minimum those procedures outlined in 40 CFR, Part 60, Appendix F and/or 40 CFR, Part 75, Appendix B for CEMS and those procedures outlined in 40 CFR, Part 60, Appendix B, Specification One and 40 CFR, Part 51, Proposed RM 203 for COMS, published Department Technical Manuals or other procedures approved in writing by the Department. The QA/QC plan shall designate a coordinator for the facility who is responsible to ensure that the QA/QC plan is implemented. The Department reserves the right to require the QA/QC plan to be revised at any time based on the results of quarterly EEMPR reviews, inspections, audits or any other information available to the Department. All procedures outlined in the QA/QC plan shall commence upon the completion date of the PST. All redundant CEMS/COMS must undergo the QA/QC procedure. [N.J.A.C. 7:27-22.16(a)]	Other: The QA/QC coordinator shall be responsible for reviewing the QA/QC plan on an annual basis. [N.J.A.C. 7:27-22.16(o)].	Other: Maintain readily accessible records of the QA/QC plan including QA date and quarterly reports. [N.J.A.C. 7:27-22.16(o)].	Submit a report: Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). All quarterly and annual QA data shall be included in quarterly EEMPR reports and kept on file at the facility. The QA data must be made available to the Department upon request. Any changes to the QA/QC plan shall be submitted in writing to the Supervisor/CEMS Program of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]
4	The permittee shall operate and maintain continuous emission monitors and continuous data recorders to measure and record the concentration of O2, nitrogen oxides (as NO2), SO2, and CO in accordance with a protocol approved by the Chief, BTS. [N.J.A.C. 7:27-22.16(e)]	Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken. When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report. EEMPR forms are available from REO. [N.J.A.C. 7:27-22.16(e)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~5~~	~~The permittee shall operate and maintain a continuous opacity monitor and continuous data recorder to measure and record the opacity between the ESP and the wet scrubber on Unit #2 in accordance with a protocol approved by the Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken. When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report. EEMPR forms are available from REO. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~
6	The permittee shall operate and maintain continuous monitor and recorder, approved by the Chief, BTS, in Unit #2 flue to monitor and record the flue gas volumetric flow rate. [N.J.A.C. 7:27-22.16(e)]	Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously . [N.J.A.C. 7:27-22.16(e)]	None.
~~7~~	~~The permittee shall not rely on the use of intermittent emission control strategies such as throttling back steam production, or other dispersion techniques as defined at 40 CFR Part 51.1(h), as a means of demonstrating compliance with the ambient air quality standards specified at NJAC 7:27-13. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~8~~	~~The permittee shall submit a quarterly excess emissions and monitoring systems performance report (EEMPR) to the Chief, REO, and Chief, BTS, within thirty (30) days of the close of each calendar quarter. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Monitored by continuous emission monitors, continuous opacity monitor, continuous flue gas flow monitor, and continuous data recorders. Equipment specification, calibration and operating procedures, and data evaluation and reporting procedures shall be approved by the Chief, BTS.[N.J.A.C. 7:27-22.16(e)].~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously or manual logging of parameter in a log book.~~ ~~Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken.~~ ~~When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report. EEMPR forms are available from REO. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
9	TSP <= ~~700.8 tons/yr. Annual limit based on preconstruction permit is in effect until April 30, 2010.~~ Annual limit of 210.2 tons/yr, based on MM 080001 application, will be in effect from May 1, 2010. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
10	PM-10 (Total) <= ~~952.52 tons/yr. Based on stack test results.~~ New Annual limit will be established after the installation of SCR and from new first stack test results. ~~That limit will be in effect from May 1, 2010.~~ [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~11~~	~~VOC (Total) <= 87.6 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
12	NOx (Total) <= ~~5,022.4 tons/yr. Annual limit based on preconstruction permit is in effect until April 30, 2012.~~ Annual limit of 770.9 tons/yr, based on SM 100003 application, will be in effect from May 1, 2012. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~13~~	~~CO <= 503.7 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
14	SO2 <= ~~7,376 tons/yr. Annual limit based on preconstruction permit (worst case operating scenario based on firing #6 fuel oil) is in effect until April 30, 2010.~~ Annual limit of 1051.2 tons/yr, based on MM 080001 application, will be in effect from May 1, 2010 . [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~15~~	~~Total HAPs <= 480 tons/yr. Annual limit based on operating permit application and preconstruction permit. [N.J.A.C. 7:27-22.16(a)] &. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~16~~	~~Arsenic compounds <= 17.09 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~17~~	~~Beryllium compounds <= 0.0876 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~30~~	~~Acrolein <= 0.079 tons/yr. Annual limit based on Initial Operating Permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~31~~	~~Benzene <= 0.351 tons/yr. Annual limit based on Initial Operating Permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~32~~	~~Benzyl chloride <= 0.193 tons/yr. Annual limit based on Initial Operating Permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~33~~	~~Cyanide compounds <= 0.674 tons/yr. Annual limit based on Initial Operating Permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~34~~	~~Dimethyl sulfate <= 0.013 tons/yr. Annual limit based on Initial Operating Permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~35~~	~~Formaldehyde <= 1.58 tons/yr. Annual limit based on Initial Operating Permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~36~~	~~Methylhydrazine <= 0.046 tons/yr. Annual limit based on Initial Operating Permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~37~~	~~Dioxins/Furans (Total) <= 0.00000124 ton/yr . Annual limit based on Initial Operating Permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
38	The permittee shall operate the Ammonia Injection Systems after the SCR system is installed and made operational during all periods that the unit#2 is operating, except during start-up, or shutdown. [N.J.A.C. 7:27-22.16(a)]	Other: The permittee shall monitor the time-periods when the Ammonia Injection System is operating, except during start-up, or shutdown.[N.J.A.C. 7:27-22.16(o)].	Other: The permittee shall record by manual logging or storing data in a computer data system, the date and time when Ammonia Injection System is operating.[N.J.A.C. 7:27-22.16(o)].	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U2 Unit 2 Steam Generator**

Operating Scenario: **OS1 Unit 2 Firing non-anthracite coal with up to 8% Tire Derived Fuel (TDF), Operating with ESP, SNCR, SCR, FGD, OFA, and Sorbent Injection (SI), OS3 Unit 2 Firing non-anthracite coal w/ up to 8% Tire Derived Fuel (TDF), and/or #6FO, Operating w/ ESP, SNCR, SCR, FGD, OFA, and Sorbent Injection (SI)**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	~~Applicable RACT requirements are listed in the group GR1. Requirements listed under GR1 are in effect before and after the installation and operation of SCR.~~ Applicable control devices requirements are listed in the group GR2. ~~Applicable requirements for hourly emission limits for HAPs and other pollutants are listed in GR4.~~ Requirements listed under these groups are applicable to U2, OS1 - OS5. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~2~~	~~If FGD is operating, opacity events would not be considered an exceedance. This exemption to opacity is applied when coal or combination of coal and #6 oil are combusted in the boiler. Please see at GR1, reference #2. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: If the opacity measured at the monitor exceeds the limit specified in the Applicable Requirement, the permittee shall take action to reduce opacity to below that limit.[N.J.A.C. 7:27-22.16(e)].~~	~~Other: The permittee shall notify SRO if COM indicates that opacity has been exceeded during times when the wet scrubber malfunctions, becomes inoperable, or is bypassed.[N.J.A.C. 7:27-22.16(e)].~~	~~Submit notification: As per the approved schedule , the facility shall report to the Chief, REO, in writing within three (3) working days after the event of any opacity exceedance. . [N.J.A.C. 7:27-22.16(e)]~~
~~3~~	~~NOx (Total) <= 341 ppmvd @ 7% O2. The maximum allowable NOx concentration rate for coal, based on 0.60 lb/MMBtu, when combusting coal, with or without tire-derived fuel, in a cyclone-fired wet boiler. [N.J.A.C. 7:27-22.16(e)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on a rolling 1 hour average. [N.J.A.C. 7:27-22.16(e)]~~	~~NOx (Total): Recordkeeping by strip chart or data acquisition (DAS) system continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]~~
~~4~~	~~Hours of Operation While Firing Coal <= 8,760 hr/yr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
10	SO2 <= 0.25 lb/MMBTU based on 24 hour average, effective from May 1, 2010. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued on January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by continuous emission monitoring system continuously, based on a daily average. A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-22.16(o)]	SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. The owner or operator shall calculate the average SO2 emission rate using the data from such a system for the SO2 concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the SO2 concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]
11	SO2 <= 0.15 lb/MMBTU based on a 30-day rolling average, effective from May 1, 2010. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued on January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by continuous emission monitoring system continuously, based on a rolling 30 day average (rolling 1 day basis). A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-22.16(o)]	SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. The owner or operator shall calculate the average SO2 emission rate using the data from such a system for the SO2 concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the SO2 concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]
12	NOx (Total) <= 0.15 lb/MMBTU based on 24 hour rolling average, effective from May 1, 2010. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a daily average. A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously The owner or operator shall calculate the average NOx emission rate using the data from such a system for the NOx concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NOx concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
13	NOx (Total) <= 0.11 lb/MMBTU based on a 30-day rolling average, effective from May 1, 2010. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued January 13, 2010. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a rolling 30 day average (rolling 1 day basis). A continuous emissions monitoring system shall be operated under N.J.A.C. 7:27-19.18. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously The owner or operator shall calculate the average NOx emission rate using the data from such a system for the NOx concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NOx concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]
~~14~~	~~SO2 <= 350 ppmvd @ 7% O2. Maximum allowable concentration based on preconstruction permit, when firing non-anthracite coal and/or low sulfur coal with/without TDF.~~ ~~This short term sulfur dioxide emission limit does not include SO2 emissions during periods when the scrubber is malfunctioning or is out of service for the maintenance or correction of a scrubber malfunction; or during periods of boiler start-up and shutdown.~~ ~~. [N.J.A.C. 7:27-22.16(a)]~~	~~SO2: Monitored by continuous emission monitoring system continuously, based on a 30 day rolling average. If a continuous SO2 emission monitor system malfunction or outage continues longer than twenty four (24) hours, starting on the 24th hour, and every three (3) hours thereafter, the permitee shall sample the coal fired to the Unit#2 not being continuously monitored for SO2 emissions, composite the samples taken each day into a daily sample, analyze the daily coal sample for sulfur content according to ASTM methods D2013, D3173, D3177, and D3180, and record the results. In lieu of the daily coal sample, the permitee may use real time data from nuclear analyzer approved by Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(e)]~~
~~15~~	~~SO2 <= 350 ppmvd @ 7% O2. Maximum allowable concentration based on preconstruction permit, when firing non-anthracite coal and /or low sulfur coal with/without TDF.~~ ~~This short term sulfur dioxide emission limit does not include SO2 emissions during periods when the scrubber is malfunctioning or is out of service for the maintenance or correction of a scrubber malfunction; or during periods of boiler start-up and shutdown.~~ ~~. [N.J.A.C. 7:27-22.16(a)]~~	~~SO2: Monitored by stack emission testing once initially and prior to permit renewal, based on the average of three 1-hour tests. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Recordkeeping by stack test results once initially and prior to permit renewal. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit a stack test protocol: Once initially and prior to permit renewal. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~16~~	~~SO2 <= 2,315 ppmvd @ 7% O2 maximum allowable concentration based on preconstruction permit, when firing non-anthracite coal and/or low sulfur coal with/without TDF during periods when the scrubber is malfunctioning or is out of service for the maintenance or correction of a scrubber malfunction. [N.J.A.C. 7:27-22.16(a)]~~	~~SO2: Monitored by continuous emission monitoring system continuously, based on a 30 day rolling average. If a continuous SO2 emission monitor system malfunction or outage continues longer than twenty four (24) hours, starting on the 24th hour, and every three (3) hours thereafter, the permitee shall sample the coal fired to the Unit#2 not being continuously monitored for SO2 emissions, composite the samples taken each day into a daily sample, analyze the daily coal sample for sulfur content according to ASTM methods D2013, D3173, D3177, and D3180, and record the results. In lieu of the daily coal sample, the permitee may use real time data from nuclear analyzer approved by Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(e)]~~
~~17~~	~~SO2 <= 2,315 ppmvd @ 7% O2 maximum allowable concentration based on preconstruction permit, when firing non-anthracite coal and/or low sulfur coal with/without TDF during periods when the scrubber is malfunctioning or is out of service for the maintenance or correction of a scrubber malfunction. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Monitored by stack emission testing once initially and prior to permit renewal, based on the average of three 1-hour tests. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Recordkeeping by stack test results once initially and prior to permit renewal. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit a stack test protocol: Once initially and prior to permit renewal. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~
18	TSP <= 0.03 lb/MMBTU based on a 30-day rolling average, effective from May 1, 2010. Maximum emission limit based on the Administrative Consent Order issued on January 24, 2006 and Administrative Consent Order Amendment issued on January 13, 2010. . [N.J.A.C. 7:27-22.16(a)]	TSP: Monitored by stack emission testing annually, based on the average of three Department validated stack test runs . [N.J.A.C. 7:27-22.16(o)]	TSP: Recordkeeping by stack test results annually. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: Annually. Refer to stack testing requirements specified in this permit at U2 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(o)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U3 Unit 3 Steam Generator**
Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Conduct comprehensive stack testing at emission point, PT3, as follows: For #6 fuel oil firing, stack tests for criteria pollutants (TSP, PM-10, VOC, CO & NOx), and mercury shall be conducted annually to demonstrate compliance with the emission limits. Ammonia shall be stack tested annually. The first of the annual stack tests must be conducted within 180 days from the date of the approved initial operating permit. Additionally, while firing #6 fuel oil, conduct stack test for criteria pollutants (TSP, PM-10, NOx, CO, & VOC), heavy metals (As, Be, Cd, Cu, Cr, Co, Pb, Mn, Hg, Ni), ammonia, acid gases (H2SO4 & HF), and PAH within 42 months from the date of the approved Initial Operating Permit. Three consecutive stack testing runs shall be conducted with unit operating at between 90 -100% of maximum heat input. Heat input (MMBtu/hr, HHV) shall be determined for each stack test. The permittee shall conduct any additional stack emission testing for the pollutants for which an emission limit has been set in Section J, Facility Specific Requirements, of this Initial Title V Operating Permit, or any other air pollutants potentially emitted by the station, upon request by the Department. [N.J.A.C. 7:27-22.16(a)] & [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing at the approved frequency, based on any 60 minute period. Stack testing shall be conducted for TSP, PM-10, NOx, SO2, CO, VOC, and HAPs and other air contaminants, as applicable. (See Applicable Requirement). Permanent sampling and testing facilities shall be provided as required by the Department to determine the nature and quantity of emissions from the boilers. Such facilities shall conform to all applicable laws and regulations concerning safe construction or safe practices. [N.J.A.C. 7:27-22.16(e)] &. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results at the approved frequency [N.J.A.C. 7:27-22.16(e)] &. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 60 days from the date of the approved initial operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. See Applicable Requirement for test schedules. The stack test report must be submitted to BTS within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a New Jersey licensed professional engineer or certified industrial hygienist. A copy of the test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall report lb/hr, lb/MMBtu(HHV), ng/dscm for PAH, and ppmvd @ 7% O2 except for particulate matter and PAH. [N.J.A.C. 7:27-22.16(e)] & [N.J.A.C. 7:27-22.18(e)] &. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
2	The permittee shall operate and maintain continuous emission monitors and continuous data recorders to measure and record the concentration of O2, nitrogen oxides (as NO2), SO2, and CO in accordance with a protocol approved by the Chief, BTS. [N.J.A.C. 7:27-22.16(e)]	Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously or manual logging of parameter in a log book. Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken. When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report. EEMPR forms are available from REO. [N.J.A.C. 7:27-22.16(e)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]
~~3~~	~~The permittee shall operate and maintain a continuous opacity monitor and continuous data recorder to measure and record the opacity after cyclone on Unit #3 in accordance with a protocol approved by the Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously or manual logging of parameter in a log book.~~ ~~Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken.~~ ~~When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report.~~ ~~EEMPR forms are available from REO. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~
4	The permittee shall operate and maintain continuous monitor and recorder, approved by the Chief, BTS, in Unit #3 flue to monitor and record the flue gas volumetric flow rate. [N.J.A.C. 7:27-22.16(e)]	Other: The continuous monitors shall be calibrated daily using calibration standards acceptable to the Department.[N.J.A.C. 7:27-22.16(e)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously or manual logging of parameter in a log book. [N.J.A.C. 7:27-22.16(e)]	None.
~~5~~	~~The permittee shall not rely on the use of intermittent emission control strategies such as throttling back steam production, or other dispersion techniques as defined at 40 CFR Part 51.1(h), as a means of demonstrating compliance with the ambient air quality standards specified at NJAC 7:27-13. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
6	The permittee shall submit a quarterly excess emissions and monitoring systems performance report (EEMPR) to the Chief, REO, and Chief, BTS, within thirty (30) days of the close of each calendar quarter. [N.J.A.C. 7:27-22.16(e)]	Other: Monitored by continuous emission monitors, continuous opacity monitor, continuous flue gas flow monitor, and continuous data recorders. Equipment specification, calibration and operating procedures, and data evaluation and reporting procedures shall be approved by the Chief, BTS.[N.J.A.C. 7:27-22.16(e)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously or manual logging of parameter in a log book. Written reports of excess emissions shall be reported on EEMPR forms and shall include the magnitude of excess emissions, the reasons for these exceedances and the corrective action taken. When no excess emissions have occurred, or the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be stated in the report. EEMPR forms are available from REO. [N.J.A.C. 7:27-22.16(e)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). Within thirty (30) days of the close of each calendar quarter, the reports shall be submitted to the Chief, REO, and Chief, BTS. [N.J.A.C. 7:27-22.16(e)]
7	TSP <= 753.4 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
8	PM-10 (Total) <= 2,215 tons/yr. Based on stack test results. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
9	VOC (Total) <= 100.7 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
10	NOx (Total) <= 1,506.7 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
11	CO <= 1,314 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
12	SO2 <= 7,897.1 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
13	Total HAPs <= 124.94 tons/yr. Annual limit based on operating permit application and preconstruction permit. [N.J.A.C. 7:27-22.16(a)] &. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
14	Arsenic compounds <= 0.789 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
15	Beryllium compounds <= 0.176 tons/yr. Annual limit based on preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Unit 3 Steam Generator
Operating Scenario: OS1 Unit 3 Firing No. 6 Oil Operating Cyclone and SNCR

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Opacity <= 20 %. No visible emissions greater than 20% opacity, exclusive of visible condensed water vapor, except for a period of time of not longer than three (3) minutes in any consecutive 30-minute period. [N.J.A.C. 7:27-3.2(a)] & [N.J.A.C. 7:27-3.2(e)] &. [N.J.A.C. 7:27-22.16(e)]~~	~~Opacity: Monitored by continuous opacity monitoring system continuously, based on any consecutive 30-minute period. If the opacity measured at the monitor exceeds the limit specified in the Applicable Requirement, the permittee shall take action to reduce opacity to below that limit. [N.J.A.C. 7:27-22.16(e)]~~	~~Opacity: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit notification: As per the approved schedule , the facility shall report to the Chief, REO, in writing within three (3) working days after the event of any opacity exceedance. . [N.J.A.C. 7:27-22.16(e)]~~
~~2~~	~~Maximum allowable emission rate of particles based on heat input rate (MMBtu/hr), Particulate Emissions <= 172 lb/hr. [N.J.A.C. 7:27- 4.2(a)]~~	~~Particulate Emissions: Monitored by stack emission testing annually, based on any 60 minute period. Refer to stack testing requirements for TSP specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-4.4] &. [N.J.A.C. 7:27-22.16(e)]~~	~~Particulate Emissions: Recordkeeping by stack test results annually. Refer to stack testing requirements for TSP specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(a)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements for TSP specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(a)]~~
3	Sulfur Content in Fuel <= 2 % by weight. Maximum allowable sulfur content in fuel oil grades/viscosity (No. 6) and geographical zone (Zone 1). [N.J.A.C. 7:27-9.2(b)]	Sulfur Content in Fuel: Monitored by fuel sampling (e.g. oil) at the approved frequency, based on the averaging period as per Department approved test method. The permittee shall sample oil received at the station by collecting one (1) sample per month from each of the on-site tanks in accordance with ASTM Method D4507. The sulfur content of No. 6 fuel oil samples shall be determined using ASTM Method D1552. [N.J.A.C. 7:27-22.16(e)]	Sulfur Content in Fuel: Recordkeeping by certified lab analysis results quarterly: once per quarter; quarters shall begin on January 1, April 1, July 1, and October 1 of each year. The permittee shall keep operating logs to accurately maintain records of the date received, supplier's name and address, quantity received, and mean sulfur content of each shipment of oil received at the station. [N.J.A.C. 7:27-22.16(e)]	Submit a report: Annually to the Chief, REO. Within thirty (30) days from the end of each calendar year, the permittee shall report the sulfur content of oil for each calendar quarter in writing to the Chief, Southern Regional Enforcement Office. [N.J.A.C. 7:27-22.16(e)]
~~4~~	~~The owner or operator of any utility boiler, regardless of size, or any non-utility boiler with a maximum gross heat input of at least 50,000,000 Btu/hr shall not exceed concentrations of VOC (Total) <= 50 ppmvd @ 7% O2. [N.J.A.C. 7:27-16.8(b)1]~~	~~VOC (Total): Monitored by stack emission testing once initially and every 5 years, based on the average of three 1-hour tests , each performed over a consecutive 60-minute period specified by the Department and performed in compliance with N.J.A.C. 7:27-16.22.. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-16.8(e)] &. [N.J.A.C. 7:27-16.23(a)2]~~	~~VOC (Total): Recordkeeping by stack test results once initially and every 5 years. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~5~~	~~The owner or operator of any utility boiler, regardless of size, or any non-utility boiler with a maximum gross heat input of at least 50,000,000 Btu/hr shall not exceed concentrations of CO <= 100 ppmvd @ 7% O2. [N.J.A.C. 7:27-16.8(b)2]~~	~~CO: Monitored by continuous emission monitoring system continuously, based on one calendar day , not including periods of equipment downtime. [N.J.A.C. 7:27-16.8(f)] &. [N.J.A.C. 7:27-16.23(a)1]~~	~~CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
6	Adjust the combustion process in accordance with N.J.A.C. 7:27-19.16 by May 1 of each calendar year. An exceedance of an emission limit which occurs during an adjustment of the combustion process, as a result of the adjustment, is not a violation of this permit. Before the combustion process adjustment begins, and after it has been completed, the maximum emission rate of NOx shall not exceed the maximum allowable emission rate specified in this approval. [N.J.A.C. 7:27-16.8(b)3]	Monitored by continuous emission monitoring system continuously , or periodic emission monitoring, annually, and inspection. The owner or operator of the equipment or source operation shall: 1. Inspect the burner, and clean or replace any components of the burner as necessary to minimize total emissions of NOx and CO; 2. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern; and 3. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly. [N.J.A.C. 7:27-19.16(a)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously and manual logging of pararmeter, annually. The owner/operator of the adjusted equipment or source operation shall record each adjustment conducted under N.J.A.C. 7:27-19.16(a) in a log book or other format approved in writing by the Department, containing the following information for each adjustment: 1.The date of adjustment and the times at which it began and ended; 2.The name, title, and affiliation of the person who made the adjustment; 3.The NOx concentration in the effluent stream, in either ppmdv or ppmv, after each adjustment was made; 4.The CO concentration in the effluent stream, in either ppmdv or ppmv, after each adjustment was made; 5.The concentration of O2 at which the CO and NOx concentrations were measured; and 6. Any other information which the Department or the EPA has required as a condition of approval of any permit or certificate issued for the equipment or source operation. [N.J.A.C. 7:27-19.16(c)]	Submit a report: Annually. Submit electronically an annual adjustment combustion process report to the Department within 45 days after the adjustment of the combustion process is completed, based on the gross heat input of the boiler in the format the Department specifies at its website. The report shall contain the following information: 1. The concentrations of NOx and CO in the effluent stream in ppmvd, and O2 in percent dry basis, measured before and after the adjustment of the combustion process. 2. The converted emission values in lb/MM BTU for the measurements taken before and after the adjustment of the combustion process; 3. A description of any corrective actions taken as a part of the combustion adjustment; and 4. The type and amount of fuel used over the 12 months prior to the annual adjustment. [N.J.A.C. 7:27-19.16(c) and. [N.J.A.C. 7:27-19.16(d)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
7	NOx (Total) <= 0.2 lb/MMBTU , maximum allowable NOx emission rate. When combusting fuel oil, the owner or operator of a tangential-fired utility boiler shall cause it to emit NOx at a rate no greater than the applicable maximum allowable NOx emission rate specifed in Table 1. [N.J.A.C. 7:27-19.4(a)] &. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on one calendar day average between May 1 and September 30, and a 30-day rolling average (rolling 1-day basis) from October 1 through April 30; and flue gas flow monitor and/or fuel flow instrument, continuously. [N.J.A.C. 7:27-19.4(a)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously and calculations. When continuous emission monitors (CEMs) are used to determine compliance with the approved NOx emission limits, B. L. England Station shall calculate the average NOx emission rate using the data from the CEM systems for the NOx concentration in the flue gas, and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NOx concentration and the fuel flow rate, B. L. England Station shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR Part 75, Appendix F, or an alternative procedure that the Department and EPA determines will yield the same result. [N.J.A.C. 7:27-19.4(a)]	None.
~~8~~	~~Maximum gross heat input from preconstruction permit, Maximum Gross Heat Input <= 1,720 MMBTU/hr (HHV). [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~9~~	~~Hours of Operation While Firing Fuel Oil <= 8,760 hr/yr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
10	Unit #3 boiler fuel limited to No. 6 fuel oil, and No. 2 fuel oil for start-up. [N.J.A.C. 7:27-22.16(e)]	Monitored by review of fuel delivery records per delivery. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by invoices / bills of lading per delivery. [N.J.A.C. 7:27-22.16(e)]	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~11~~	~~Annual heat input to the cyclone boiler, based on the Maximum Gross Heat Input, is 15,067,200 MMBtu (HHV)/any consecutive 365 days.~~ ~~Total annual heat input during any consecutive 365-day period shall be calculated by adding the total heat input to the cyclone boiler for a given day to the total heat input during the preceding 364-day period.~~ ~~Daily MMBtu fuel use shall be calculated using the following formula:~~ ~~MMBtu/day = (x Mgal #6 fuel oil/day x 150 MMBtu/Mgal),~~ ~~where x = #6 fuel oil combusted daily.~~ ~~This procedure will begin the first day following the issuance of the Operating Permit. This accounting will not include heat input for the days prior to the Operating Permit approval. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by fuel flow/firing rate instrument continuously, based on a consecutive 365 day period (rolling 1 day basis) and calculations. [N.J.A.C. 7:27-22.16(a)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Compliance shall be determined based on a 365 consecutive day period computed with daily sums. [N.J.A.C. 7:27-22.16(a)]~~	~~Submit a report: As per the approved schedule , verify compliance with annual emission limits based on fuel usage. Results shall be reported annually within 30 days of the close of the calendar year. [N.J.A.C. 7:27-22.16(a)]~~
12	Sulfur Content in Fuel <= 1 % by weight based on preconstruction permit. Maximum allowable sulfur content of No. 6 fuel oil. [N.J.A.C. 7:27-22.16(a)]	Sulfur Content in Fuel: Monitored by fuel sampling (e.g. oil) each month during operation. The permittee shall sample oil received at the station by collecting one (1) sample per month from each of the on-site tanks in accordance with ASTM Method D4507. The sulfur content of No. 6 fuel oil samples shall be determined using ASTM Method D1552. [N.J.A.C. 7:27-22.16(e)]	Sulfur Content in Fuel: Recordkeeping by certified lab analysis results quarterly: once per quarter; quarters shall begin on January 1, April 1, July 1, and October 1 of each year. [N.J.A.C. 7:27-22.16(e)]	Submit a report: Annually to the Chief, REO. Within thirty (30) days from the end of each calendar year, the permittee shall report the sulfur content of oil for each calendar quarter in writing to the Chief, Southern Regional Enforcement Office. [N.J.A.C. 7:27-22.16(e)]
13	Particulate emissions from Unit #3 tangential-fired boiler shall be controlled by cyclone during all times when the unit is operating. [N.J.A.C. 7:27-22.16(e)]	Monitored by continuous opacity monitoring system continuously, based on any consecutive 30-minute period. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]	None.
14	Nitrogen oxides emissions shall be controlled by selective non-catalytic reduction. [N.J.A.C. 7:27-22.16(e)]	Monitored by continuous emission monitoring system continuously for the NOx concentration in the flue gas; and process monitoring system, continuously, for ammonia. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]	None.
15	Maximum allowable emission rate based on preconstruction permit, TSP <= 172 lb/hr. [N.J.A.C. 7:27-22.16(e)]	TSP: Monitored by stack emission testing annually, based on any 60 minute period. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]	TSP: Recordkeeping by stack test results annually. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
16	Maximum allowable emission rate based on stack test results. PM-10 (Total) <= 505.71 lb/hr. [N.J.A.C. 7:27-22.16(a)]	PM-10 (Total): Monitored by stack emission testing annually, based on each of three Department validated stack test runs. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(o)]	PM-10 (Total): Recordkeeping by stack test results annually. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(o)]
~~17~~	~~Maximum allowable emission rate based on preconstruction permit, VOC (Total) <= 23 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~VOC (Total): Monitored by stack emission testing at the approved frequency, based on any 60 minute period. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~VOC (Total): Recordkeeping by stack test results at the approved frequency. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~
~~18~~	~~Maximum allowable emission rate based on preconstruction permit, CO <= 300 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing at the approved frequency, based on the average of three 1-hour tests. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Recordkeeping by stack test results at the approved frequency. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~
~~19~~	~~Maximum allowable concentration rate based on preconstruction permit, CO <= 100 ppmvd @ 7% O2. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average and stack emission testing based on the average of three 1-hour tests at the approved frequency. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously and stack test results at the approved frequency. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~
20	Maximum allowable emission rate based on preconstruction permit, NOx (Total) <= 344 lb/hr. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing at the approved frequency, based on the average of three 1-hour tests. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Recordkeeping by stack test results at the approved frequency. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]
~~21~~	~~NOx (Total) <= 140 ppmvd @ 7% O2. Maximum concentration value from preconstruction permit,. [N.J.A.C. 7:27-22.16(e)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average and stack emission testing based on the average of three 1- hour tests at the approved frequency. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~NOx (Total): Recordkeeping by strip chart, data acquisition (DAS) system, or other method approved by BTS continuously and stack test results at the approved frequency. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in this permit at U3 OS Summary, Ref.#1. [N.J.A.C. 7:27-22.16(e)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U6 Emergency Fire Water Pump Engine**
Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Annual emission limit based on operating permit application. TSP <= 1.53 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Annual emission limit based on operating permit application. PM-10 (Total) <= 1.53 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~3~~	~~Annual emission limit based on operating permit application. VOC (Total) <= 1.8 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~Annual emission limit based on operating permit application. CO <= 4.69 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
5	Annual emission limit based on operating permit application. SO2 <= 1.49 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
6	Annual emission limit based on operating permit application. NOx (Total) <= 21.6 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U6 Emergency Fire Water Pump Engine**
Operating Scenario: **OS1 Emergency Fire Water Pump Engine**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~No visible emissions greater than 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. Opacity <= 20 %. [N.J.A.C. 7:27-3.5]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~Maximum allowable particulate emission limit from the combustion of fuel based on rated heat input of source. Particulate Emissions <= 0.672 lb/hr. [N.J.A.C. 7:27-4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
3	Maximum allowable sulfur content in fuel oil by fuel oil type/viscosity and geograghical zone. Sulfur Content in Fuel <= 0.3 % by weight. [N.J.A.C. 7:27- 9.2(b)]	Sulfur Content in Fuel: Monitored by fuel sampling (e.g. oil) once per bulk fuel shipment. [N.J.A.C. 7:27- 9.2(b)]	Sulfur Content in Fuel: Recordkeeping by fuel certification receipts once per bulk fuel shipment. Records of the name of the oil supplier and a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil as specified at 40 CFR Part 60.41c shall be maintained. [N.J.A.C. 7:27-9.2(b)]	None.
4	Fuel use limited to diesel fuel. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
5	Maximum Gross Heat Input <= 1.12 MMBTU/hr (HHV). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~6~~	~~Maximum emission rate based on operating permit application. TSP <= 0.35 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
7	Maximum emission rate based on operating permit application. PM-10 (Total) <= 0.35 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~8~~	~~Maximum emission rate based on operating permit application. VOC (Total) <= 0.41 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~9~~	~~Maximum emission rate based on operating permit application. CO <= 1.07 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
10	Maximum emission rate based on operating permit application. SO2 <= 0.34 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
11	Maximum emission rate based on operating permit application. NOx (Total) <= 4.94 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**
Operating Scenario: **OS1 Coal Handling at Rotary Dumper/ Hopper**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
3	Fugitive dust emissions from coal unloading shall be controlled by surfactant-based wet suppression. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~4~~	~~Feed rate of coal transferred from rotary dumper to concrete hoppers. Coal Flowrate <= 1,200 tons/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~Maximum emission rate from operating permit application. TSP <= 0.5 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
6	Maximum emission rate from operating permit application. PM-10 (Total) <= 0.21 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**

Operating Scenario: **OS2 Coal handling on receiving conveyors #11 & #12 (underground with dust suppression)**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
3	Fugitive dust emissions from coal receiving shall be controlled by surfactant-based wet suppression. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~4~~	~~Feed rate of coal transferred from rotary dumper to receiving conveyor(s) #11 & #12. Coal Flowrate <= 1,500 tons/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~Maximum emission rate from operating permit application. TSP <= 0.5 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
6	Maximum emission rate from operating permit application. PM-10 (Total) <= 0.21 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**

Operating Scenario: **OS4 Coal Handling on Reclaim Conveyors #15 & #16 with vibrating feeders to Transfer Tower**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~3~~	~~Feed rate of coal transferred from reclaim conveyors #15 & #16 to transfer conveyor #17 at transfer tower. Coal Flowrate <= 400 tons/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~Reclaim vibrating feeders shall be adjusted to achieve the allowable total flow of coal. [N.J.A.C. 7:27-22.16(a)]~~	~~Monitored by gravimetric monitoring continuously. [N.J.A.C. 7:27-22.16(a)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
5	Fugitive dust emissions from Conveyor #16 vibrating feeders shall be controlled by surfactant-based wet suppression. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~6~~	~~Maximum emission rate from operating permit application. TSP <= 0.18 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
7	Maximum emission rate from operating permit application. PM-10 (Total) <= 0.062 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**
Operating Scenario: **OS5 Coal Handling at Crusher 1 Hopper (with dust suppression)**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
3	The dust suppression system will be operating while the coal crushers 1 and/or 2 are in operation. The dust suppression system consists of water spray or equivalent. [N.J.A.C. 7:27-22.16(e)]	Monitored by visual determination at the approved frequency. The owner/operator shall observe water spray, or equivalent dust suppression system, is operating while the coal crushers 1 and/or 2 are in operation. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by manual logging of parameter at the approved frequency. Operator shall record the dates and times (start and stop) that the dust suppression system is in operation in a permanently bound logbook. [N.J.A.C. 7:27-22.16(a)]	None.
~~4~~	~~Feed rate of coal transferred from transfer conveyor #17 to crusher hopper and crusher 1, Coal Flowrate <= 450 tons/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~The online nuclear cross belt analyzer shall be maintained and operated on the 30" conveyor #17 before the crusher according to protocol approved by BTS. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~6~~	~~Maximum emission rate from operating permit application. TSP <= 0.052 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
7	Maximum emission rate from preconstruction permit. PM-10 (Total) <= 0.025 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**
Operating Scenario: **OS6 Coal Handling at Shaker Unloading Hopper**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~3~~	~~Feed rate of coal transferred from railcar shaker unloader/hopper to receiving conveyor #1. Coal Flowrate <= 600 tons/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~Maximum emission rate from operating permit application. TSP <= 0.18 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
5	Maximum emission rate from operating permit application. PM-10 (Total) <= 0.062 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**
Operating Scenario: **OS7 Coal Handling at Crusher 2 Hopper (with dust suppression)**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
3	The dust suppression system will be operating while the coal crushers 1 and/or 2 are in operation. The dust suppression system consists of water spray or equivalent. [N.J.A.C. 7:27-22.16(e)]	Monitored by visual determination at the approved frequency. The owner/operator shall observe water spray, or equivalent dust suppression system, is operating while the coal crushers 1 and/or 2 are in operation. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by manual logging of parameter at the approved frequency. Operator shall record the dates and times (start and stop) that the dust suppression system is in operation in a permanently bound logbook. [N.J.A.C. 7:27-22.16(a)]	None.
~~4~~	~~Feed rate of coal transferred from transfer conveyor #1 to crusher hopper and crusher 2, Coal Flowrate <= 450 tons/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~Maximum emission rate from operating permit application. TSP <= 0.052 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
6	Maximum emission rate from preconstruction permit. PM-10 (Total) <= 0.025 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**

Operating Scenario: **OS10 Coal/Tire-Derived Fuel (TDF) Handling on 30" main feed Conveyor #2 (with dust suppression)**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~3~~	~~Feed rate of coal/TDF transferred from crusher house to tripper conveyor #3 at the power house. Coal/TDF Flowrate <= 420 tons/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
4	Fugitive dust emissions from coal/TDF conveying shall be controlled by surfactant-based wet suppression. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~5~~	~~Maximum emission rate from operating permit application. TSP <= 0.18 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
6	Maximum emission rate from operating permit application. PM-10 (Total) <= 0.062 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**

Operating Scenario: **OS11 Coal/Tire-Derived Fuel Handling on Tripper Conveyor #3 to Unit 1 Coal Bunker**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~3~~	~~Maximum limit of blended coal and/or TDF transferred from tripper conveyor #3 to Unit 1 bunker, Coal/TDF Flowrate <= 420 tons/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~TSP: Maximum emission rate from operating permit application is Below Reporting Threshold. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
5	PM-10 (Total): Maximum emission rate from operating permit application is Below Reporting Threshold. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U7 Coal and Tire-Derived Fuel Handling**

Operating Scenario: **OS12 Coal Handling on Tripper Conveyor #3 to Unit 2 Coal Bunker**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable emission rate for particles, Particulate Emissions <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
2	Coal unloading, processing and transferring operations shall be covered. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~3~~	~~Maximum limit of non-anthracite coal and/or TDF transferred from tripper conveyor #3 to Unit 2 bunker, Coal/TDF Total Material Transferred <= 420 tons/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~TSP: Maximum emission rate from operating permit application is Below Reporting Threshold. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
5	PM-10 (Total): Maximum emission rate from operating permit application is Below Reporting Threshold. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U8 Unit 3 Cooling Tower**
Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Annual emission limit based on maximum hours of operation. TSP <= 127.5 tons/yr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
2	Annual emission limit based on maximum hours of operation. PM-10 (Total) <= 127.5 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U8 Unit 3 Cooling Tower**
Operating Scenario: **OS1 Cooling Tower**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Maximum allowable particulate emission rate from source emission point based on 99% effciency of collection or based on 0.02 grains per SCF of stack gas flow as determined in the Table at N.J.A.C. 7:27-6.2(a) Particulate Emissions <= 30 lb/hr. [N.J.A.C. 7:27- 6.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~Opacity <= 20 %. Particulate emissions shall be no greater than 20% opacity, exclusive of visible condensed water vapor, except for a period of not longer than three minutes in any consecutive 30 minute period. [N.J.A.C. 7:27-6.2(d)] &. [N.J.A.C. 7:27- 6.2(e)]~~	~~None.~~	~~None.~~	~~None.~~
3	This source shall be equipped with high efficiency drift eliminators. The quantity of drift shall be less than 0.002% of the circulating water flow. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~4~~	~~Maximum flowrate of cooling tower circulating water. Flowrate <= 63,500 gal/min. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~The natural draft cooling tower water shall be salt water. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~6~~	~~Water treatment chemicals containing hexavalent chromium shall not be added in the cooling tower circulating water. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~7~~	~~Sea salt concentration in the cooling tower circulating water shall be 45,000 ppm or less. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~8~~	~~Maximum emission rate from preconstruction permit. TSP <= 29.11 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
9	Maximum emission rate from operating permit application. PM-10 (Total) <= 29.11 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

B L ENGLAND GENERATING STATION (73242)
BOP100003

Date: 12/16/10

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 7 Fuel Hand. Coal and Tire-Derived Fuel Handling

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	FH-1	Coal Handling at Rotary Dumper/ Hopper	Normal - Steady State	E9		PT22								
OS2	FH-2	Coal handling on receiving conveyors #11 & #12 (underground with dust suppression)	Normal - Steady State	E10		PT23								
~~OS3~~	~~FH-3~~	~~Coal Handling on Stackout Conveyor #13~~	~~Normal - Steady State~~	~~E11~~		~~PT24~~								
OS4	FH-17	Coal Handling on Reclaim Conveyors #15 & #16 with vibrating feeders to Transfer Tower	Normal - Steady State	E12										
OS5	FH-4	Coal Handling at Crusher 1 Hopper (with dust suppression)	Normal - Steady State	E13		PT28								
OS6	FH-6	Coal Handling at Shaker Unloading Hopper	Normal - Steady State	E15		PT26								
OS7	FH-7	Coal Handling at Crusher 2 Hopper (with dust suppression)	Normal - Steady State	E16		PT27								
~~OS8~~	~~FH-12~~	~~Tire-Derived Fuel Handling in Hopper~~	~~Normal - Steady State~~	~~E17~~		~~PT30~~								
~~OS9~~	~~FH-13~~	~~Tire-Derived Fuel Handling on TDF Conveyor and Separator System~~	~~Normal - Steady State~~	~~E18~~		~~PT30~~								
OS10	FH-5, 8 & 14	Coal/Tire-Derived Fuel (TDF) Handling on 30" main feed Conveyor #2 (with dust suppression)	Normal - Steady State	E14		PT29								
OS11	FH-15	Coal/Tire-Derived Fuel Handling on Tripper Conveyor #3 to Unit 1 Coal Bunker	Normal - Steady State	E19		PT29								

B L ENGLAND GENERATING STATION (73242)
BOP100003

Date: 12/16/10

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 7 Fuel Hand. Coal and Tire-Derived Fuel Handling

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS12	FH-16	Coal Handling on Tripper Conveyor #3 to Unit 2 Coal Bunker	Normal - Steady State	E20		PT29								

~~**U 8 C. Tower Unit 3 Cooling Tower**~~

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	C. Tower	Cooling Tower	Normal - Steady State	E21		PT21								

~~**U 9 Limestone Limestone Handling**~~

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	LS-1	Limestone Handling from Truck	Normal - Steady State	E22	CD11 (P)	PT12	3-05-104-05							

Margaret Gardner
New Jersey Department of Environmental Protection
Air Quality Permitting Program
Bureau of Air Permits
401 East State St., 2nd Floor
P.O. Box 420
Mail Code 401-02
Trenton, New Jersey 08625-0420
Margaret.Gardner@dep.state.nj.us

September 2, 2011

VIA ELECTRONIC MAIL AND U.S. MAIL

Re: Proposed BART Determinations for the BL England Facility

Dear Margaret Gardner,

The Sierra Club hereby submits the following comments concerning New Jersey Department of Environmental Protection's ("NJDEP") Proposed Technical Addendum to the Best Available Retrofit Technology Determinations to Protect and Enhance Visibility in New Jersey's Federally Designated Class I Area (the "Proposed Addendum").

INTRODUCTION

NJDEP has, in its Proposed Addendum, identified BART for the BL England facility, both in terms of the required individual control technologies, and in terms of emission limits for nitrogen oxides ("NOx"), sulfur dioxide ("SO_2"), particulate matter ("PM") pollution from BL England. As discussed below, while the control technologies identified do indeed represent BART, the emission limits identified by NJDEP do not. Specifically, the emission limits for NOx, SO2, and PM are all much higher than are commensurate with the BART identified. As such, NJDEP should revise the Proposed Addendum to include stricter emission limits consistent with BART.

BACKGROUND

Factual Background

The Sierra Club

The Sierra Club is the oldest and largest grassroots environmental group in the United States, with over 617,000 activists and members, including over 18,000 in the state of New Jersey. Sierra Club's members live, work, attend school, travel and recreate in areas adversely affected by BL England's emissions, including preserves spaces such as the Brigantine Wilderness Area.

The BL England Facility

RC Cape May operates the BL England coal-fired plant on the shores of Great Egg Harbor within the Pinelands National Reserve in Beesley's Point, Upper Township, New Jersey. BL England has a nameplate capacity of 449 MW and is one of the largest power generation facilities in New Jersey. The plant consists of one coal-fired cyclone boiler with a maximum rating of 129 MW (Unit 1), one coal-fired cyclone boiler with a maximum rating of 160 MW (Unit 2), and one oil-fired boiler with a maximum rating of 160 MW (Unit 3). Proposed Addendum at 16-18.

BL England is subject to an Administrative Consent Order issued by NJDEP that requires the facility to either shutdown or repower Units 1 and 2 or meet the NOx, SO2, and PM emission limits of the ACO through installation of appropriate controls.

The plant's location is roughly ten miles from the Brigantine Wilderness Area of the Edwin B. Forsythe National Wildlife Refuge, located in southern New Jersey. The Brigantine Wilderness Area is a federally-designated Class I area, bringing it within the ambit of the regulations promulgated by the EPA in 1999 pursuant to its authority under the Clean Air Act ("CAA") to address haze caused by numerous sources over large geographic areas and return visibility levels within all Class I areas to their natural conditions.[1]

In the Proposed Addendum, NJDEP has identified BL England as a facility subject to this authority, and further identified the Best Available Retrofit Technology ("BART") applicable to BL England to address these haze concerns. Specifically, the Proposed Addendum identifies Selective Catalytic Reduction ("SCR"), overfire air ("OFA"), a wet sulfur scrubber, and electrostatic precipitators ("ESP") as BART for BL England Units 1 and 2 as concerns NOx, SO2, and particulate matter ("PM") pollution. Proposed Addendum at 16-18.

The Proposed Addendum further identifies the following emission limits for Units 1 and 2 as BART:

d

[1] As discussed more fully below.

Unit	NOx	SO2	PM
1 (129 MW)	626.3 tpy 0.100 lbs/MMBtu 30-day rolling average 0.150 lbs/MMBtu 24-hour average	854.1 tpy 0.150 lbs/MMbtu 30-day rolling average 0.250 lbs/MMbtu 24-hour average	170.8 tpy 0.030 lbs/MMBtu 3-hour average
2 (160 MW)	770.9 tpy 0.100 lbs/MMBtu 30-day rolling average 0.150 lbs/MMBtu 24-hour average	1051.2 tpy 0.150 lbs/MMbtu 30-day rolling average 0.250 lbs/MMbtu 24-hour average	210.2 tpy 0.030 lbs/MMBtu 3-hour average

Id.; *see also id.* at 8; N.J.A.C. 7:27-27.7(d).

Regulation of Haze Impacts

In order to protect their "intrinsic beauty and historical and archeological treasures," Congress established a national goal to reduce human-caused haze pollution and achieve natural visibility conditions at national parks, wilderness areas, and other designated Class I areas by 2064. *See* H.R. Rep. No.95-294, at 203-04 (1977); 42 U.S.C. § 7491(a)(1); 40 C.F.R. § 51.308(d)(1). In order to meet this goal, states are required to design an implementation plan to reduce, and ultimately eliminate, haze from air pollution sources within its borders that may reasonably be anticipated to cause or contribute to visibility impairment at any protected area located within or beyond that state's boundaries.

Each state implementation plan ("SIP") must provide "emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress towards meeting the national goal." 42 U.S.C. § 7491(b)(2). Two of the most critical features of a regional haze SIP are requirements for (1) the installation of BART technology for delineated major stationary sources of pollution and (2) a long-term strategy for making reasonable progress towards the national visibility goal. 42 U.S.C. § 7491(b)(2)(A) & (B).

Pollutants that cause visibility impairment also harm public health. Haze pollutants include nitrogen oxides ("NOx"), sulfur dioxide ("SO_2"), particulate matter ("PM"), ammonia, and sulfuric acid. NOx is a precursor to ground level ozone, which is associated with respiratory diseases, asthma attacks, and decreased lung function. In addition, NOx reacts with ammonia, moisture, and other compounds to form particulates that can cause and worsen respiratory diseases, aggravate heart disease, and lead to premature death.[2] Similarly, SO_2 increases asthma symptoms, leads to increased hospital visits, and can form particulates that aggravate respiratory

[2] EPA, Health – Nitrogen Dioxide, http://www.epa.gov/air/nitrogenoxides/health.html.

and heart diseases and cause premature death.[3] PM can penetrate deep into the lungs and cause a host of health problems, such as aggravated asthma, chronic bronchitis, and heart attacks.[4]

EPA estimated that in 2015, full implementation of the Regional Haze Rule nationally will prevent 1,600 premature deaths, 2,200 non-fatal heart attacks, 960 hospital admissions, and over 1 million lost school and work days.[5] The Regional Haze Rule will result in health benefits valued at $8.4 to $9.8 billion annually.[6] More than 100,000 children and 365,000 adults are diagnosed with asthma in Oklahoma, and hospitalizations in Oklahoma due to asthma cost roughly $57.9 million in 2007 alone.[7] According to the Clean Air Task Force, the 6 units at issue in the proposed rule annual cause approximately 118 deaths, 181 heart attacks, 2,037 asthma attacks, 86 hospital admissions, 74 cases of chronic bronchitis, and 129 emergency room visits.[8]

While the Regional Haze Rule was designed to provide redress for visibility impairment, the BART Guidelines expressly provide for the consideration of non-air quality environmental impacts in step four of the 5-step BART process.[9] This consideration includes the environmental impact on human health.

Visibility impairment is measured in deciviews, which is a perceptible change in visibility. The higher the deciview value is, the worse the impairment.[10] Each deciview change is an equal incremental change in visibility perceived by the human eye.

Best Available Retrofit Technology (BART)

One of the most important parts of a regional haze plan is the requirement that major older sources of air pollution modernize their control equipment by installing BART. BART limits are required for major stationary sources that were in existence on August 7, 1977 and

---

[3] EPA, Health – Sulfur Dioxide, http://www.epa.gov/air/sulfurdioxide/health.html.
[4] EPA, Health & Environment – Particulate Matter, http://www.epa.gov/air/particlepollution/health.html.
[5] EPA, Fact Sheet – Final Clean Air Visibility Rule, http://www.epa.gov/visibility/fs_2005_6_15.html.
[6] *Id.*
[7] Oklahoma State Dept. of Health, Asthma Surveillance Report (2008), *available at* http://www.ok.gov/health/documents/Asthma%20Surveillance%20Report_2008.pdf
[8] Clean Air Task Force, Death and Disease from Power Plants, *available at* http://www.catf.us/coal/problems/power_plants/existing/map.php?state=Oklahoma
[9] Section IV.D. of the BART Guidelines at 40 C.F.R. Part 51, Appendix Y.
STEP 1 – Identify All Available Retrofit Control Technologies,
STEP 2 – Eliminate Technically Infeasible Options
STEP 3 – Evaluate Control Effectiveness of Remaining Control Technologies,
STEP 4 – Evaluate Impacts and Document the Results, and
STEP 5 – Evaluate Visibility Impacts.
[10] Details about the deciview can be found in the preamble to the regional haze rule. 64 Fed. Reg. 35714, 35725 (July 1, 1999).

began operating after August 7, 1962 and emit air pollutants that may reasonably be anticipated to cause or contribute to any impairment of visibility is a Class I area. 42 U.S.C. § 7491(b)(2)(A). The term "major stationary source" is defined as sources that have the potential to emit 250 tons or more of any pollutant and fall within one of 26 categories of industrial sources defined by the Act. 42 U.S.C. § 7491(g)(7). A BART-eligible source is one that meets the above criteria and is responsible for an impact on visibility in a Class I area of 0.5 deciview or more. 40 C.F.R. Part 51, Appendix Y.

BART is defined as an emission limitation:

> . . .**based on the degree of reduction achievable through the application of the best system of continuous emission reduction** for each pollutant which is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

40 C.F.R. §51.301 (emphasis added). Accordingly, a BART determination consists of both establishing the level of technical controls representing BART, and of establishing an emission limit representing BART.

SUBSTANTIVE COMMENTS

The Proposed Addendum's Emission Limits for BL England Are Too Lax To Be Consistent with BART

NJDEP has properly identified what controls are BART for BL England. The Sierra Club agrees that OFA, SCR, wet scrubbers, and ESP—when properly maintained and employed continuously—are BART for BL England.

However, the emissions limitations contemplated by the Proposed Addendum are not consistent with NJDEP's BART identification. They appear to be drawn solely from existing emissions requirements already placed on BL England, and as a result, they are far too high. At a minimum, these limits should be set with knowledge of what emission levels have been achieved elsewhere, with the end result being that the limits are dramatically lowered in any final BART determination.

The Proposed Addendum's NOx Emission Limits are Far Too High

The Proposed Addendum incorrectly identifies NOx emission limits of 0.100 lbs/MMBtu on a 30-day rolling average and 0.150 lbs/MMBtu on a 24-hour average as BART. However, limits actually consistent with BART would be much lower—indeed, the NOx limits in the Proposed Addendum are twice what can be and is achieved with the best available retrofit technology used at other facilities.

For example, in April 2010, the Georgia Department of Natural Resources issued a permit to Plant Washington in which NOx emission limits are 0.050 on a 30-day rolling average and 0.030 lb/MMBtu on a 12-month rolling average while firing subbituminous coal or a computed weighted average on a 12-month rolling basis based on the heat rate weight amount of each, assuming the bituminous coal contributes 0.044 lb/MMBtu to the weighted average.[11] These limits are significantly below the limits in the Proposed Addendum, despite the fact that BL England is also designed to use subbituminous coal.

Other permit limits have been set for facilities burning a wide range of coals that are lower than those proposed for FCPP. These include:

- 0.05 lb/MMBtu 30-day rolling average, Dallman Unit 4, IL[12]
- 0.05 lb/MMBtu 30-day rolling average, Sunflower Holcomb, KS[13]
- 0.05 lb/MMBtu 12-month rolling, Wygen 3, WY[14]
- 0.05 lb/MMBtu 12-month rolling, Dry Fork, WY[15]
- 0.05 lb/MMBtu 12-month rolling, Spruce, TX [16]
- 0.05 lb/MMBtu annual average, Longleaf, GA[17]
- 0.067 lb/MMBtu 24-hour average, Newmont, NV[18]

Thus, time and again, agencies all over the country have determined that BART requires much more significant reductions than NJDEP proposes for BL England, after consideration of the technology available, the costs and impacts of compliance, and the degree of improvement in visibility.

Accordingly, any final BART determination for BL England should include NOx emission limits of no higher than 0.050 lbs/MMBtu on a 30-day rolling average and 0.0.67 lbs/MMBtu on a 24-hour average.

---

[11] *See* Power4Georgians, LLC, Prevention of Significant Deterioration Air Permit Application, November 26, 2008, Supplemental Data, Exhibit A: Emission Calculations, Table A-2, attached hereto as Exhibit 1.

[12] *See* Illinois EPA, Construction Permit—PSD Approval, NSPS Emission Units, Dallman Unit 4, August 10, 2006, p. 4-13, attached hereto as Exhibit 2.

[13] *See* Kansas Department of Health and Environment, Air Emission Source Construction Permit, Holcomb Station, December 16, 2010, p. 7, attached hereto as Exhibit 3.

[14] *See* Wyoming Department of Environmental Quality, Black Hills Corporation, Wygen 3, Permit No. CT-4517, February 5, 2007, attached hereto as Exhibit 4.

[15] *See* Wyoming Department of Environmental Quality, Basin Electric Power Corp., Dry Fork Station, Permit No. CT-4631, October 15, 2007, attached hereto as Exhibit 5.

[16] *See* Spruce Special Conditions, Permit Numbers 70492 and PSD-TX-1037, June 28, 2005, attached hereto as Exhibit 6.

[17] *See* Longleaf Energy Associates, LLC, Air Quality Permit No. 4911-099-0030-P-01-0, May 14, 2007, attached hereto as Exhibit 7.

[18] *See* State of Nevada, Bureau of Pollution Control, Class I Air Quality Operating Permit, General Requirements, No. AP4911-1349, attached hereto as Exhibit 8.

The Proposed Addendum's SO2 Emission Limits are Far Too High

The Proposed Addendum suggests SO2 emission limits of 0.150 lbs/MMbtu on a 30-day rolling average and 0.250 lbs/MMbtu on a 24-hour average; however, as with the Proposed Addendum's NOx limits, these limits are higher than would be dictated by BART.

As an initial matter, EPA's BART Guidelines contemplate large facilities meeting a presumptive BART standard of 0.150 lbs/MMBtu. *See* EPA Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations, 70 Fed. Reg. 39,104, 39,131 (July 6, 2005) (hereinafter "BART Guidelines").[19] This is a significantly tighter limit than the 24-hour average SO2 limit in the Proposed Addendum.

In practice, facilities are able to achieve even lower levels of SO2 emissions than contemplated by the BART Guidelines. For example, EPA Region 9 issued a Prevention of Significant Deterioration ("PSD") permit for the Desert Rock Energy Facility to be located adjacent to the Navajo mine on Navajo lands in northwest New Mexico. In conducting a BACT determination, EPA Region 9 determined that Desert Rock could meet an SO2 emission limit of 0.06 lbs/MMbtu on a 24-hour block-average basis.[20] The Desert Rock coal plant would use similar SO2 air pollution control technologies as BL England: wet scrubbers.

Thus, NJDEP should issue a final SO2 BART determination requiring BL England to meet a limit of 0.06 lbs/MMbtu on a 24-hour block average at Units 1 and 2; the 30-day rolling average limit should be even lower.

The Proposed Addendum's PM Emission Limits are Far Too High

As regards PM, the Proposed Addendum suggests that BART for BL England would consist of a limit of 0.030 lbs/MMBtu on a 3-hour average for both Units 1 and 2. As with both the NOx and SO2 limits, this is far too high. Based on prior PM BACT determinations, a BART limit on PM should be no higher than 0.010 lb/MMBtu. Any final BART determination for BL England should include an accordingly lower PM emission limit.[21]

CONCLUSION

For the foregoing reasons, while the Sierra Club believes that NJDEP has made the correct determination as to BART controls for the BL England facility, the emission limitations in the Proposed Addendum are too high, and inconsistent with the BART identified by NJDEP.

---

[19] Although EPA contemplated the presumptive limits as applying to 750 MW facilities, the technological limits EPA identifies are instructive.

[20] *See* http://www.regulations.gov/#!docketDetail;rpp=10;po=60;D=EPA-R09-OAR-2007-1110.

[21] Further, to ensure compliance with this limit, a continuous emissions monitoring system ("CEMS") for PM should be required.

Accordingly, any final BART determination for BL England must contain the stricter emission limits discussed above.

Sincerely,

Zachary M. Fabish
The Sierra Club
50 F Street NW, 8th Floor
Washington, DC 20002
zachary.fabish@sierraclub.org
(202) 675-7917

Exhibit 1

EXHIBIT A

EMISSIONS CALCULATIONS

EXHIBIT A

TABLE OF CONTENTS

LIST OF TABLES

ADDITIONAL INFORMATION

1 Coal Fired Boiler - Stack S1

Basis	Value	Units	Reference
Gross Power Rating - Full Load	930	MW	Plant Washington Specification
Maximum Heat Input - Full Load	8300	MMBtu/hr	Plant Washington Specification
Fuel Oil Burner Rating	1300	MMBtu/hr	Plant Washington Specification
Maximum Expected Hours of Operation	8760	hr/yr	Plant Washington Specification
PM Emission Factor - Coal	0.018	lb/MMBtu	BACT
PM_{10} Emission Factor - Coal	0.018	lb/MMBtu	BACT
PM_{10} Emission Factor Filterable- Coal	0.012	lb/MMBtu	BACT
$PM_{2.5}$ Percentage-Filterable	53.00%		AP 42, Section 1.1 - Particulate Matter Size Distribution
Condensable $PM_{2.5}$ Emission Factor	0.006	lb/MMBtu	Engineering Estimate
SO_2 Emission Factor - Coal	959	lb/hr	BACT (3 hour averaging period) - Section 4.3.5
SO_2 Emission Factor - Coal	0.052	lb/MMBtu	BACT (annual averaging period)
NO_X Emission Factor - Coal	0.05	lb/MMBtu	BACT (30-Day Rolling averaging period)
CO Emission Factor - Coal	0.10	lb/MMBtu	BACT (30-Day Rolling averaging period)
CO Emission Factor - Coal	0.30	lb/MMBtu	BACT (1-hour averaging period)
VOC Coal Emission Factor - Coal	0.003	lb/MMBtu	BACT
H_2SO_4 Emission Factor - Coal	0.004	lb/MMBtu	BACT
Pb Emission Factor - Coal	1.60E-05	lb/MMBtu	BACT-PSD Avoidance Limit
Hg Emission Factor - Coal	1.68E-06	lb/MMBtu	BACT
HF Emission Factor - Coal	2.68E-04	lb/MMBtu	BACT
Exhaust Flow Rate	1,927,690	dscfm	Vendor Specification
Ammonia Slip Concentration	10	ppm	Vendor Guarantee

PM Emissions - Full Load

8300 MMBtu/hr * 0.018 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 654 ton/yr

PM_{10} Emissions - Full Load

8300 MMBtu/hr * 0.018 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 654 ton/yr

PM_{10} (Filterable) Emissions - Full Load

8300 MMBtu/hr * 0.012 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 436 ton/yr

$PM_{2.5}$ (Filterable) Emissions

436 ton/yr * 53.00% = 231 ton/yr

$PM_{2.5}$ (Condensable) Emissions

8300 MMBtu/hr * 0.006 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 218 ton/yr

$PM_{2.5}$ (Filterable + Condensable) Emissions

231 ton/yr + 218 ton/yr = 449 ton/yr

SO_2 Emissions - Full Load (3 hr and 24 hr averaging periods)

959 lb/hr * 8760 hr/yr / 2,000 lb/ton = 4,200 ton/yr

SO_2 Emissions - Full Load (annual averaging periods)

8300 MMBtu/hr * 0.052 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 1,890 ton/yr

NO_X Emissions - Full Load

8300 MMBtu/hr * 0.05 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 1,818 ton/yr

CO Emissions - Full Load (Annual)

8300 MMBtu/hr * 0.10 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 3635.40 ton/yr

CO Emissions - Full Load (1 hr averaging period)

8300 MMBtu/hr * 0.30 lb/MMBtu = 2,490 lb/hr

VOC Emissions - Full Load

8300 MMBtu/hr * 0.003 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 109.1 ton/yr

H_2SO_4 Emissions - Full Load

8300 MMBtu/hr * 0.004 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 145.4 ton/yr

HF Emissions - Full Load

8300 MMBtu/hr * 2.68E-04 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 9.74 ton/yr

Pb Emissions - Full Load

8300 MMBtu/hr * 1.60E-05 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 0.58 ton/yr

Hg Emissions - Full Load

8300 MMBtu/hr * 1.68E-06 lb/MMBtu / 2,000 lb/ton * 8,760 hr/yr = 0.06 ton/yr

Ammonia Emissions - Full Load

1,927,690 dscfm * 10 ppm / 385 dscf/lb-mole * 17 lb/lb-mole * 60 min/hr = 51.07 lb/hr

51.07 lb/hr / 2,000 lb/ton * 8,760 hr/yr = 223.7 ton/yr

2 Auxiliary Boiler - Stack S45

Basis	Value	Units	Reference
Boiler Rating	240	MMBtu/hr	Plant Washington Specification
Maximum Hours of Operation	876	hr/yr	Plant Washington Specification
PM Emission Factor - Fuel Oil	0.024	lb/MMBtu	BACT
PM_{10} Emission Factor - Fuel Oil	0.024	lb/MMBtu	BACT
PM_{10} Emission Factor Filterable - Fuel Oil	0.014	lb/MMBtu	BACT
$PM_{2.5}$ Percentage Filterable - Fuel Oil	12.0%	of PM_{10}	AP-42, Table 1.3-6
Condensable $PM_{2.5}$ Emission Factor	0.010	lb/MMBtu	Engineering Estimate
SO_2 Emission Factor - Fuel Oil	0.05	lb/MMBtu	BACT
NO_X Emission Factor - Fuel	0.10	lb/MMBtu	BACT
CO Emission Factor - Fuel Oil	0.04	lb/MMBtu	BACT
VOC Coal Emission Factor - Fuel Oil	0.003	lb/MMBtu	BACT
H_2SO_4 Emission Factor - Fuel Oil	6.00E-05	lb/MMBtu	BACT
HF Emission Factor - Fuel Oil	3.19E-08	lb/MMBtu	AP-42 Table 1.3-9
Pb Emission Factor - Fuel Oil	9.00E-06	lb/MMBtu	AP-42, Table 1.3-10
Hg Emission Factor - Fuel Oil	3.00E-06	lb/MMBtu	AP-42, Table 1.3-10

PM Emissions

Fuel Oil

240 MMBtu/hr * 0.024 lb/MMBtu / 2,000 lb/ton * 876 hr/yr = 2.52 ton/yr

PM_{10} Emissions

Fuel Oil

240 MMBtu/hr * 0.024 lb/MMBtu / 2,000 lb/ton * 876 hr/yr = 2.52 ton/yr

PM_{10} (Filterable) Emissions - Full Load

Fuel Oil

240 MMBtu/hr * 0.014 lb/MMBtu / 2,000 lb/ton * 876 hr/yr = 1.472 ton/yr

$PM_{2.5}$ (Filterable) Emissions

Fuel Oil

1.472 ton/yr * 12.00% = 0.177 ton/yr

$PM_{2.5}$ (Condensable) Emissions
Fuel Oil

240 MMBtu/hr	*	0.010 lb/MMBtu	/	2,000 lb/ton	*	876 hr/yr	=	1.051 ton/yr

$PM_{2.5}$ (Filterable + Condensable) Emissions
Fuel Oil

0.177 ton/yr	+	1.051 ton/yr	=	1.228 ton/yr

SO_2 Emissions
Fuel Oil

240 MMBtu/hr	*	0.050 lb/MMBtu	/	2,000 lb/ton	*	876 hr/yr	=	5.26 ton/yr

NO_X Emissions
Fuel Oil

240 MMBtu/hr	*	0.10 lb/MMBtu	/	2,000 lb/ton	*	876 hr/yr	=	10.51 ton/yr

CO Emissions
Fuel Oil

240 MMBtu/hr	*	0.04 lb/MMBtu	/	2,000 lb/ton	*	876 hr/yr	=	4.20 ton/yr

VOC Emissions
Fuel Oil

240 MMBtu/hr	*	0.0030 lb/MMBtu	/	2,000 lb/ton	*	876 hr/yr	=	0.32 ton/yr

H_2SO_4 Emissions
Fuel Oil

240 MMBtu/hr	*	6.00E-05 lb/MMBtu	/	2,000 lb/ton	*	876 hr/yr	=	6.31E-03 ton/yr

HF Emissions
Fuel Oil

240 MMBtu/hr	*	3.19E-08 lb/MMBtu	/	2,000 lb/ton	*	876 hr/yr	=	3.35E-06 ton/yr

Pb Emissions
Fuel Oil

240 MMBtu/hr	*	9.00E-06 lb/MMBtu	/	2,000 lb/ton	*	876 hr/yr	=	9.46E-04 ton.yr

Hg Emissions
Fuel Oil

240 MMBtu/hr	*	3.00E-06 Btu	/	2,000 lb/ton	*	876 hr/yr	=	3.15E-04 ton.yr

3 Diesel Fired Equipment

Basis	Value	Units	Reference
Diesel-Fuel Engine Rating	1500	HP	Plant Washington Specification
Diesel-Fuel Fire Water Pump Rating	350	HP	Plant Washington Specification
Maximum Diesel Engine Hours of Operation	500	hr/yr	Plant Washington Specification
Maximum Fire Water Pump Hours of Operation	500	hr/yr	Plant Washington Specification
Fire Water Pump PM/PM_{10} Emission Factor	2.20E-03	lb/hp-hr	AP-42, Table 3.3-1
Fire Water Pump SO_2 Emission Factor	2.05E-03	lb/hp-hr	AP-42, Table 3.3-1
Fire Water Pump NO_X Emission Factor	0.031	lb/hp-hr	AP-42, Table 3.3-1
Fire Water Pump CO Emission Factor	6.68E-03	lb/hp-hr	AP-42, Table 3.3-1
Fire Water Pump VOC Emission Factor	2.47E-03	lb/hp-hr	AP-42, Table 3.3-1
Diesel Engine PM/PM_{10} Emission Factor	7.00E-04	lb/hp-hr	AP-42, Table 3.4-1
Diesel Engine SO_2 Emission Factor	4.05E-04	lb/hp-hr	AP-42, Table 3.4-1, Assuming Diesel Fuel has 0.05% Sulfur Content
Diesel Engine NO_X Emission Factor	0.013	lb/hp-hr	AP-42, Table 3.4-1, Controlled
Diesel Engine CO Emission Factor	5.50E-03	lb/hp-hr	AP-42, Table 3.4-1
Diesel Engine VOC Emission Factor	7.05E-04	lb/hp-hr	AP-42, Table 3.4-1

PM/PM_{10} Emissions

Diesel Fuel Engine

1500 HP * 7.00E-04 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 0.26 ton/yr

Diesel Fuel Fire Water Pump

350 HP * 2.20E-03 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 0.193 ton/yr

Total Emissions

0.19 ton/yr + 0.26 ton/yr = 0.46 ton/yr

SO_2 Emissions

Diesel Fuel Engine

1500 HP * 4.05E-04 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 0.15 ton/yr

Diesel Fuel Fire Water Pump

350 HP * 2.05E-03 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 0.18 ton/yr

Total Emissions

0.15 ton/yr + 0.18 ton/yr = 0.33 ton/yr

NO_X Emissions

Diesel Fuel Engine

1500 HP * 1.30E-02 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 4.88 ton/yr

Diesel Fuel Fire Water Pump

350 HP * 3.10E-02 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 2.71 ton/yr

Total Emissions

4.88 ton/yr + 2.71 ton/yr = 7.59 ton/yr

CO Emissions

Diesel Fuel Engine

1500 HP * 5.50E-03 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 2.06 ton/yr

Diesel Fuel Fire Water Pump

350 HP * 6.68E-03 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 0.58 ton/yr

Total Emissions

2.06 ton/yr + 0.58 ton/yr = 2.65 ton/yr

VOC Emissions

Diesel Fuel Engine

1500 HP * 7.05E-04 lb/hp-hr / 2,000 lb/ton * 500 hr/yr = 0.26 ton/yr

Diesel Fuel Fire Water Pump

350 HP	*	2.47E-03 lb/hp-hr	/	2,000 lb/ton	*	500 hr/yr	=	0.22 ton/yr			

Total Emissions

0.26 ton/yr	+	0.22 ton/yr	=	**0.48 ton/yr**

4 Cooling Tower - Stack S2 - S35

Basis:	Value	Reference:
Water Flow Rate	450,000 gal/min	Plant Washington Specification
Operating hours	8,760 hr/yr	Plant Washington Specification
Total Drift %	0.0005%	Plant Washington Specification
Total Dissolved Solids	3300 ppm	Plant Washington Specification
Density of Water	1 g/mL	Constant
PM_{10} Percentage	46.10%	Riesman, Joel and Gordon Frisbie. "Calculating Realistic PM_{10} from Cooling Towers."
$PM_{2.5}$ Percentage	0.20%	Riesman, Joel and Gordon Frisbie. "Calculating Realistic PM_{10} from Cooling Towers."

Total Liquid Drift

450,000 gal/min	*	0.0005%	*	3.785 L / gal	=	8.52 L/min					

PM Emission

3300 g / 1000000 g	*	1 g/mL	*	1000 mL / 1 L	*	8.52 L/min	*	1 lb / 453.59 g	=	0.06 lb/min	
0.06 lb/min	*	60 min / hr	*	8,760 hr/yr	/	2,000 lb/ton	=	**16.28 ton/yr**			

PM_{10} Emissions

16.28 ton/yr	*	46.10%	=	**7.51 ton/yr**

$PM_{2.5}$ Emissions

16.28 ton/yr	*	0.20%	=	**3.29E-02 ton/yr**

Table A-1 : Cooling Tower $PM_{10}/PM_{2.5}$ Percentage Evaluation

Solid Particles Same Density as Sodium Chloride (2.2 g/cm^3) - Assumption

Drift Water Droplets Have a Density of Water (1.0 g/cm^3) - Assumption

TDS 3300 mg/L - Project Design Specification

Particle density 2.2 g/cm^3

EPRI Droplet Diameter (um)	Droplet Volume (um^3)	Droplet Mass (ug)	Particle Mass Solids (ug)	Solid Particle Volume (um^3)	Solid Particle Diameter (um)	EPRI % Mass Smaller
10	524	5.24E-04	1.73E-06	0.79	1.145	0
20	4189	4.19E-03	1.38E-05	6.28	2.289	0.196
30	14137	1.41E-02	4.67E-05	21.21	3.434	0.226
40	33510	3.35E-02	1.11E-04	50.27	4.579	0.514
50	65450	6.54E-02	2.16E-04	98.17	5.724	1.816
60	113097	1.13E-01	3.73E-04	169.65	6.868	5.702
70	179594	1.80E-01	5.93E-04	269.39	8.013	21.348
90	381704	3.82E-01	1.26E-03	572.56	10.302	49.812
110	696910	6.97E-01	2.30E-03	1045.36	12.592	70.509
130	1150347	1.15E+00	3.80E-03	1725.52	14.881	82.023
150	1767146	1.77E+00	5.83E-03	2650.72	17.171	88.012
180	3053628	3.05E+00	1.01E-02	4580.44	20.605	91.032
210	4849048	4.85E+00	1.60E-02	7273.57	24.039	92.468
240	7238229	7.24E+00	2.39E-02	10857.34	27.473	94.091
270	10305995	1.03E+01	3.40E-02	15458.99	30.907	94.689
300	14137167	1.41E+01	4.67E-02	21205.75	34.341	96.288
350	22449298	2.24E+01	7.41E-02	33673.95	40.065	97.011
400	33510322	3.35E+01	1.11E-01	50265.48	45.789	98.34
450	47712938	4.77E+01	1.57E-01	71569.41	51.512	99.071
500	65449847	6.54E+01	2.16E-01	98174.77	57.236	99.071
600	113097336	1.13E+02	3.73E-01	169646.00	68.683	100
$PM_{2.5}$	0.202 %					
PM_{10}	46.1 %					

Completed by: JFD 11/26/2008
Checked by: SAK 11/26/2008

5 Particulate Matter Baghouse Sources

Source	Stack ID	Model ID	Emission Factor gr/dscf	Air Flowrate (cfm)	PM/PM_{10} Emissions		$PM_{2.5}$ Emissions	
					(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Crusher House Dust Collector	S40	CRUSH	0.005	24,000	1.03	4.51	0.16	0.72
Tripper Deck	S41	TRIP	0.005	18,000	0.77	3.38	0.12	0.54
Limestone Preparation Building Silo	S42	LIMEPR	0.005	5,000	0.21	0.94	5.79E-02	0.25
Fly Ash Filter Separator (Fly Ash Mechanical Exhausters)	S43	ASHEXH	0.005	2,407	0.10	0.45	0.05	0.24
Fly Ash Silo	S37	FLYASH	0.005	1,500	0.06	0.28	0.03	0.15
Mercury Sorbent Silo	S38*	HGSILO	0.005	1,500	1.61E-02	7.04E-02	1.61E-02	7.04E-02
SO_3 Sorbent Silo	S36*	SO3SILO	0.005	1,500	1.61E-02	7.04E-02	1.61E-02	7.04E-02
Pre-Treatment Soda Ash Silo	S44*	SODAASH	0.005	1,500	8.04E-03	3.52E-02	8.04E-03	3.52E-02
Pre-Treatment Hydrated Lime Silo	S39*	LSILO	0.005	1,500	8.04E-03	3.52E-02	2.17E-03	9.50E-03
PRB Stackout (Insertable Dust Collector)	S46	PRBSO	0.005	1,500	0.06	0.28	1.03E-02	4.51E-02
Illinois No. 6 Stackout (Insertable Dust Collector)	S47	IL6SO	0.005	1,500	0.06	0.28	1.03E-02	4.51E-02
Limestone Stackout (Insertable Dust Collector)	S48	LIMESO	0.005	1,500	0.06	0.28	1.74E-02	7.60E-02

* lb/hr emission rate reflects the average hourly emission rate over a 24-hr period (The sorbent silos are expected to vent only 6 hours per day and the soda ash and lime silos will operate only 3 hours per day)

Parameters

Basis	Value	Reference
PM Emission Factor	0.0050 gr/dscf	Vendor Design Basis
Crusher House Dust Collector Operating Hours	8,760 hr/yr	Project Specification
Tripper Deck Operating Hours	8,760 hr/yr	Project Specification
Limestone Preparation Building Operating Hours	8,760 hr/yr	Project Specification
Fly Ash Mechanical Exhausters Operating Hours	8,760 hr/yr	Project Specification
Fly Ash Silo Operating Hours	8,760 hr/yr	Project Specification
Mercury Sorbent Silo Operating Hours	2,190 hr/yr	Project Specification
SO_3 Sorbent Silo Operating Hours	2,190 hr/yr	Project Specification
Pre-Treatment Soda Ash Silo Operating Hours	1,095 hr/yr	Project Specification
Pre-Treatment Hydrated Lime Silo Operating Hours	1,095 hr/yr	Project Specification
Ash $PM_{2.5}$ Percentage	53.00%	AP 42, Section 1.1 - Particulate Matter Size Distribution
Lime $PM_{2.5}$ Percentage	27.00%	AP 42, Table 11.17-7 - PM Size Distribution for Rotary Kiln with Fabric Filter
Coal $PM_{2.5}$ Percentage	16.00%	AP-42, Appendix B.1 (Section 11.10 Coal Cleaning: Dry Process)

Sample Emissions Calculations (Crusher House Dust Collector):

Hourly:

$$0.005 \text{ gr/dscf} * \frac{24{,}000 \text{ dscf}}{\text{min}} * \frac{\text{lb}}{7{,}000 \text{ gr}} * \frac{60 \text{ min}}{\text{hr}} = \frac{1.029 \text{ lb}}{\text{hr}}$$

Yearly:

$$\frac{1.029 \text{ lb}}{\text{hr}} * 8{,}760 \text{ hr/yr} / 2{,}000 \text{ lb/ton} = \frac{4.51 \text{ ton}}{\text{yr}}$$

Completed by: BSA 11/26/2008
Checked by: SAK 11/26/2008

Table A-2 : Coal Design Data

Item (%) As Received (Wet Basis)	PRB		50/50 Blend		Illinois #6	
	Average	Abnormal	Average	Abnormal	Average	Abnormal
Moisture	29.61	32.05	19.81	21.19	10	10.32
Carbon	49.16	47.66	55.24	53.89	61.32	60.12
Hydrogen	3.43	3.29	4.45	4.10	5.46	4.9
Oxygen	11.31	12.25	9.75	9.77	8.19	7.28
Nitrogen	0.71	0.57	1.55	1.21	2.38	1.85
Sulfur	0.32	0.53	1.72	2.23	3.11	3.93
Ash	5.46	3.65	7.49	7.63	9.52	11.6
HHV (Btu/lb)	8500	8300	9950	9650	11,400	11,000
Trace Analysis (ppm) (Dry Basis)						
Chlorine	100	220	1400	2110	2700	4000
Fluorine	77	181	79	152	80	124
Mercury	0.1	0.25	0.1	0.2	0.09	0.15
Lead	4.63	10.8	7.7	18	10.8	25.3

Completed by : JDF 11/26/2008
Checked by: SAK 11/26/2008

6 PM Drop Point Emission Factors for Material Handling

Emission Description	Source ID	Pollutant			Units	Reference
		TSP	PM_{10}	$PM_{2.5}$		
Coal Rail Unloading (indoor)	A4	4.32E-05	2.04E-05	3.09E-06	lb/ton	AP-42, 13.2.4.3, Eqn (1)
Transfer Point for PRB Coal (outdoor)	A6, A8	7.59E-05	3.59E-05	5.44E-06	lb/ton	AP-42, 13.2.4.3, Eqn (1)
Transfer Point for Illinois Basin Coal (outdoor)	A7, A9	3.47E-04	1.64E-04	2.49E-05	lb/ton	AP-42, 13.2.4.3, Eqn (1)
Limestone Rail Unloading (indoor)	A5	4.32E-05	2.04E-05	3.09E-06	lb/ton	AP-42, 13.2.4.3, Eqn (1)
Limestone Transfer Point (outdoor)	A10	3.47E-04	1.64E-04	2.49E-05	lb/ton	AP-42, 13.2.4.3, Eqn (1)
Bottom Ash Transfer Point to Bottom Ash Bin (outdoor)	A3	1.97E-04	9.31E-05	1.41E-05	lb/ton	AP-42, 13.2.4.3, Eqn (1)
Bottom Ash Transfer Point from Bin to Truck (outdoor)	A3	1.97E-04	9.31E-05	1.41E-05	lb/ton	AP-42, 13.2.4.3, Eqn (1)

Parameter	Value		Reference
Coal Moisture Content PRB Coal	29.61	%	Typical for PRB from Project Specification
Coal Moisture Content Illinois Basin Coal	10		Typical for Illinois #6 from Project Specification
Limestone Moisture Content	10	%	Plant Washington Specification
Bottom Ash Moisture Content	15	%	Plant Washington Specification
Gypsum Moisture Content	20	%	Plant Washington Specification
Fly Ash Moisture Content	15	%	Plant Washington Specification
Mercury Sorbent Moisture	12	%	Plant Washington Specification
Hydrated Lime Moisture	1	%	Plant Washington Specification
Soda Ash Moisture	1	%	Plant Washington Specification
SO_3 Sorbent Moisture	10	%	Plant Washington Specification
Wind Speed, Outdoor	6.46 mph		Based on average wind speed of 2.89 m/s for Macon, GA (1987-1991)
Wind Speed, Indoor	1.3 mph		Lower bound for emission equation AP-42, 13.2.4(1)
Percent of the time wind is greater than 12 mph	6	%	Based on Macon/Centerville Weather Data 1987-1991

Notes:

Material Handling Emission Factor — AP-42 Section 13.2.4.3, Equation (1)

$E = k\ (0.0032)\ ((U/5)^{1.3} / (M/2)^{1.4})$

Where:
E = Emissions in lb/tons
k = Particle Size Multiplier
U = Mean Wind Speed (mph)
M = Material Moisture Content (%)

Aerodynamic Particle Species	k
Total Suspended Particle (TSP)	0.74
PM_{10}	0.35
$PM_{2.5}$	0.053

Sample Calculations (TSP for Rail Unloading):

$$0.74 * 0.0032 * \left(\frac{1.3\ \text{mph}}{5}\right)^{1.3} / \left(\frac{29.61\%}{2}\right)^{1.4} = 9.45\text{E-}06\ \text{lb/ton}$$

Particulate Matter Drop Point Emissions

Emission Description	Source ID	Pollutant			Units
		TSP	PM_{10}	$PM_{2.5}$	
Rail Unloading	A4	2.84E-01	1.34E-01	2.03E-02	ton/yr
Transfer Point for PRB Coal	A6, A8	0.07	3.28E-02	4.97E-03	ton/yr
Transfer Point for Illinois Basin Coal	A7, A9	0.32	1.50E-01	2.27E-02	ton/yr
Limestone Unloading	A5	1.89E-01	8.95E-02	1.35E-02	ton/yr
Limestone Transfer Point	A10	3.45E-02	1.63E-02	2.47E-03	ton/yr
Bottom Ash Transfer Point to Bottom Ash Bin	A3	2.69E-02	1.27E-02	1.93E-03	ton/yr
Bottom Ash Transfer Point from Bin to Truck	A3	2.69E-02	1.27E-02	1.93E-03	ton/yr

Material Throughput

Parameter	Value	Reference
Powder River Basin Coal Throughput	1,826,834 ton/yr	Typical 50/50 Blend - Plant Washington Specification
Illinois No. 6 Coal Throughput	1,826,834 ton/yr	Typical 50/50 Blend - Plant Washington Specification
Limestone Throughput	198,923 ton/yr	Plant Washington Specification
Ash Throughput	273,660 ton/yr	Typical 50/50 Blend - Plant Washington Specification
Rail unloading rate	1,500 ton/hr	Plant Washington Specification
Limestone unloading rate	1,000 ton/hr	Plant Washington Specification

Sample Emission Calculations (TSP for Rail Unloading):

$$13{,}140{,}000 \text{ ton/yr} * 4.32\text{E-}05 \text{ lb/ton} * \frac{1 \text{ ton}}{2000 \text{ lb}} = 2.84\text{E-}01 \text{ ton/yr}$$

Area Emission Rate

Bottom Ash Storage and Handling System

PM_{10} Emission Rate	2.55E-2 ton/yr
$PM_{2.5}$ Emission Rate	3.86E-3 ton/yr
Modeled Area	257 m^2

PM_{10} Emission Rate

$$2.55\text{E-}2 \text{ ton/yr} * \frac{2000 \text{ lb/ton}}{8760 \text{ hr/yr}} * \frac{453.6 \text{ g/lb}}{3600 \text{ sec/hr}} / 257 \text{ m}^2 = 2.85\text{E-}06 \text{ g/(s-m}^2\text{)}$$

$PM_{2.5}$ Emission Rate

$$3.86\text{E-}3 \text{ ton/yr} * \frac{2000 \text{ lb/ton}}{8760 \text{ hr/yr}} * \frac{453.6 \text{ g/lb}}{3600 \text{ sec/hr}} / 257 \text{ m}^2 = 4.32\text{E-}07 \text{ g/(s-m}^2\text{)}$$

Limestone Rail Unloading

PM_{10} Emission Rate	8.95E-2 ton/yr
$PM_{2.5}$ Emission Rate	1.35E-2 ton/yr
Modeled Area	168 m^2

PM_{10} Emission Rate

$$8.95\text{E-}2 \text{ ton/yr} * \frac{2000 \text{ lb/ton}}{8760 \text{ hr/yr}} * \frac{453.6 \text{ g/lb}}{3600 \text{ sec/hr}} / 168 \text{ m}^2 = 1.53\text{E-}05 \text{ g/(s-m}^2\text{)}$$

$PM_{2.5}$ Emission Rate

1.35E-2 ton/yr	*	2000 lb/ton 8760 hr/yr	*	453.6 g/lb 3600 sec/hr	/	168 m^2	= 2.32E-06 g/(s-m^2)

Coal Rail Unlading

PM_{10} Emission Rate	1.34E-1 ton/yr
$PM_{2.5}$ Emission Rate	2.03E-2 ton/yr
Modeled Area	167 m^2

PM_{10} Emission Rate

1.34E-1 ton/yr	*	2000 lb/ton 8760 hr/yr	*	453.6 g/lb 3600 sec/hr	/	167 m^2	= 2.31E-05 g/(s-m^2)

$PM_{2.5}$ Emission Rate

2.03E-2 ton/yr	*	2000 lb/ton 8760 hr/yr	*	453.6 g/lb 3600 sec/hr	/	167 m^2	= 3.50E-06 g/(s-m^2)

7 Solid Material Handling Facility Fugitive Dust Emissions

Emissions form Earth Moving Operations-Ash Portion of SMHF - Source A1

Basis	Value	Units	Reference
PM_{10} Scaling Factor, k	0.75		AP-42, Table 11.9-1 Bulldozing (Overburden)
$PM_{2.5}$ Scaling Factor, k	0.105		AP-42, Table 11.9-1 Bulldozing (Overburden)
Silt Content	6.9	%	AP-42, Table 11.9-3 Bulldozers (Overburden)
Moisture Content	7.9	%	AP-42, Table 11.9-3 Bulldozers (Overburden)
Control Efficiency	90	%	Plant Washington Specification
Solid Material Handling Area	118	acres	Plant Washington Specification
Acre to m^2 Conversion	4046.86	m^2/Acre	Conversion Factor

PM Emissions

$$5.7 * \left(6.9 \wedge 1.2\right) / \left(7.9 \wedge 1.3\right) = 3.94 \text{ lb/hr}$$

$$3.94 \text{ lb/hr} * \frac{1 \text{ ton}}{2000 \text{ lb}} * 8{,}760 \text{ hr/yr} * \frac{(100\%-90\%)}{100\%} = \boxed{1.73 \text{ ton/yr}}$$

PM_{10} Emission Rate

$$0.75 * 1 * \left(6.9 \wedge 1.5\right) / \left(7.9 \wedge 1.4\right) = 0.75 \text{ lb/hr}$$

$$0.75 \text{ lb/hr} * \frac{1 \text{ ton}}{2000 \text{ lb}} * 8{,}760 \text{ hr/yr} * \frac{(100\%-90\%)}{100\%} = \boxed{0.33 \text{ ton/yr}}$$

Area Emission Rate

$$0.33 \text{ ton/yr} * \frac{2000 \text{ lb}}{1 \text{ ton}} / 8{,}760 \text{ hr/yr} * \frac{1 \text{ hr}}{3600 \text{ s}} * \frac{453.5 \text{ g}}{1 \text{ lb}} = 0.01 \text{ g/s}$$

$$\frac{0.01 \text{ g/s}}{118 \text{ acre}} / \frac{4.05E+03 \text{ m}^2}{\text{acre}} = \boxed{1.99E-08 \text{ g/(s-m}^2)}$$

$PM_{2.5}$ Emission Rate

$$0.105 * 5.7 * \left(6.9 \wedge 1.2\right) / \left(7.9 \wedge 1.3\right) = 0.41 \text{ lb/hr}$$

$$0.41 \text{ lb/hr} * \frac{1 \text{ ton}}{2000 \text{ lb}} * 8{,}760 \text{ hr/yr} * \frac{(100\%-90\%)}{100\%} = \boxed{0.18 \text{ ton/yr}}$$

Area Emission Rate

$$0.18 \text{ ton/yr} * \frac{2000 \text{ lb}}{1 \text{ ton}} / 8{,}760 \text{ hr/yr} * \frac{1 \text{ hr}}{3600 \text{ s}} * \frac{453.5 \text{ g}}{1 \text{ lb}} = 5.21E-03 \text{ g/s}$$

$$\frac{5.21E-03 \text{ g/s}}{118 \text{ acre}} / \frac{4.05E+03 \text{ m}^2}{\text{acre}} = \boxed{1.09E-08 \text{ g/(s-m}^2)}$$

Completed by: BSA11/26/2008
Checked by: SAK 11/26/2008

Emissions form Earth Moving Operations-Gypsum Portion of SMHF - Source A2

Basis	Value	Units	Reference
PM_{10} Scaling Factor, k	0.75		AP-42, Table 11.9-1 Bulldozing (Overburden)
$PM_{2.5}$ Scaling Factor, k	0.105		AP-42, Table 11.9-1 Bulldozing (Overburden)
Silt Content	6.9	%	AP-42, Table 11.9-3 Bulldozers (Overburden)
Moisture Content	7.9	%	AP-42, Table 11.9-3 Bulldozers (Overburden)
Control Efficiency	90	%	Plant Washington Specification
Solid Material Handling Area	267	acres	Plant Washington Specification
Acre to m^2 Conversion	4046.86	m^2/Acre	Conversion Factor

PM Emissions

$$5.7 * \frac{(6.9 \wedge 1.2)}{(7.9 \wedge 1.3)} = 3.94 \text{ lb/hr}$$

$$3.94 \text{ lb/hr} * \frac{1 \text{ ton}}{2000 \text{ lb}} * 8{,}760 \text{ hr/yr} * \frac{(100\%-90\%)}{100\%} = \boxed{1.73 \text{ ton/yr}}$$

PM_{10} Emission Rate

$$0.75 * 1 * \frac{(6.9 \wedge 1.5)}{(7.9 \wedge 1.4)} = 0.75 \text{ lb/hr}$$

$$0.75 \text{ lb/hr} * \frac{1 \text{ ton}}{2000 \text{ lb}} * 8{,}760 \text{ hr/yr} * \frac{(100\%-90\%)}{100\%} = \boxed{0.33 \text{ ton/yr}}$$

Area Emission Rate

$$0.33 \text{ ton/yr} * \frac{2000 \text{ lb}}{1 \text{ ton}} / 8{,}760 \text{ hr/yr} * \frac{1 \text{ hr}}{3600 \text{ s}} * \frac{453.5 \text{ g}}{1 \text{ lb}} = 0.01 \text{ g/s}$$

$$\frac{0.01 \text{ g/s}}{267 \text{ acre}} / \frac{4.05\text{E+}03 \text{ m}^2}{\text{acre}} = \boxed{8.78\text{E-}09 \text{ g/(s-m}^2)}$$

$PM_{2.5}$ Emission Rate

$$0.105 * 5.7 * \frac{(6.9 \wedge 1.2)}{(7.9 \wedge 1.3)} = 0.41 \text{ lb/hr}$$

$$0.41 \text{ lb/hr} * \frac{1 \text{ ton}}{2000 \text{ lb}} * 8{,}760 \text{ hr/yr} * \frac{(100\%-90\%)}{100\%} = \boxed{0.18 \text{ ton/yr}}$$

Area Emission Rate

$$0.18 \text{ ton/yr} * \frac{2000 \text{ lb}}{1 \text{ ton}} / 8{,}760 \text{ hr/yr} * \frac{1 \text{ hr}}{3600 \text{ s}} * \frac{453.5 \text{ g}}{1 \text{ lb}} = 5.21\text{E-}03 \text{ g/s}$$

$$\frac{5.21\text{E-}03 \text{ g/s}}{267 \text{ acre}} / \frac{4.05\text{E+}03 \text{ m}^2}{\text{acre}} = \boxed{4.82\text{E-}09 \text{ g/(s-m}^2)}$$

8 InActive PRB Coal Storage Pile Emission Calculations - Source A6

Basis	Value		Reference
Pile Volume	20,422,395	ft^3	Plant Washington Specification- Based on Trapezoidal-elevated Plane Shape
Base Width	900	ft	Plant Washington Specification
Base length	750	ft	Plant Washington Specification
Top Width	802	ft	Plant Washington Specification
Top length	652	ft	Plant Washington Specification
Pile Height	34.2	ft	Plant Washington Specification
Threshold Velocity	1.12	m/s	Table 13.2.5-2 AP-42 for wind erosion from piles
Surface Area	705,977 ft^2 =	65,581 m^2	

Modeled Area at top of pile: 802 ft * 652 ft = 523,058 ft^2 = 48,589 m^2

Pile B2 from Fig 13..2.5-2 is the selected Pile Configuration for wind contours because the prevailing wind is WNW. According to the figure, the maximum shear velocity is 1.1 times ten percent of the prevailing wind; therefore, wind erosion occurs whenever the fastest 2 minute wind exceeds the following value:

$$V = \frac{1.12}{0.11} = 10.2 \text{ m/s} = 22.78 \text{ mph}$$

Sample Calculation:
Erosion Potentials were calculated for the dates where the normalized wind surface wind speeds exceeded the threshold velocity for uncrusted coal piles (1.12 m/s)
Erosion Potential ((AP-42, 13.2.5-3, Equation 3)
$P=58(u^*-u^*_t)^2+25(u^*-u^*_t)$ g/m^2
where:
P = Erosion Potential
u^* = Friction velocity = 0.1 u
u^*_t = Threshold Friction Velocity
u_s = Surface Wind Speed
u_t = Approach Wind Speed
December 1, 2006 - 1.1 Wind Contour

$$P = 58 * (1.13 - 1.12)^2 + 25 * (1.13 - 1.12) = 0.28 \text{ g/m^2}$$

Emissions are computed by multiplying the Erosion Potential by the surface area of the pile, the Aerodynamic Particle Size Multiplier to speciate the PM size, and the fraction of the pile subarea that is subject to a specified wind contour. Emissions from the pile are controlled to 90% by dust suppressant

Emission rates multiplied by k = 0.5 to reduce emissions to just PM_{10} and k = 0.075 to $PM_{2.5}$ (AP-42, 13.2.5-3)
Fraction of Pile Subarea Subject to 0.9 Contour of Normalized Surface Wind Speed = 0
Fraction of Pile Subarea Subject to 1.1 Contour of Normalized Surface Wind Speed = 0
December 1, 2006 - PM10 Emissions for 1.1 Wind Contour

$$0.28 \text{ g/m^2} * 65{,}581 \text{ m^2} * 0.5 * 0 * \frac{(100\%-90\%)}{100\%} = 0.00 \text{ g/d}$$

InActive PRB Coal Storage Pile Emission Calculations - Source A6

Daily records of fastest mile from 12/1/06 through 11/30/07 and it exceeded the calculated threshold on the following dates:(10 m anemometer)

	Wind Speed	Wind Speed	Normalized Surface Wind Speeds				Erosion Potential $P=58(u^*-u^*_t)^2+25(u^*-u^*_t)$ g/m^2 (AP-42, 13.2.5-3, Equation 3)		Daily PM_{10} Erosion Potential		Daily PM_{10} Erosion Potential Summation	Daily $PM_{2.5}$ Erosion Potential		Daily $PM_{2.5}$ Erosion Potential Summation
Date	mph	m/s	$u_t/u_s = 0.2$	$u_t/u_s = 0.6$	$u_t/u_s = 0.9$	$u_t/u_s = 1.1$	P(0.9)	P(1.1)	P(0.9)	P(1.1)		P(0.9)	P(1.1)	
20061201	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20061207	24	10.73	0.21	0.64	0.97	1.18					0		0.00	0.00
20061225	26	11.62	0.23	0.70	1.05	1.28					0		0.00	0.00
20061226	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20061231	24	10.73	0.21	0.64	0.97	1.18					0		0.00	0.00
20070108	23	10.28	0.21	0.62	0.93	1.13					0		0.00	0.00
20070109	28	12.52	0.25	0.75	1.13	1.38					0	0.00	0.00	0
20070128	24	10.73	0.21	0.64	0.97	1.18					0		0.00	0.00
20070213	31	13.86	0.28	0.83	1.25	1.52					0	0	0.00	0
20070218	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20070301	32	14.30	0.29	0.86	1.29	1.57					0	0	0.00	0
20070302	30	13.41	0.27	0.80	1.21	1.48					0	0	0.00	0
20070316	29	12.96	0.26	0.78	1.17	1.43					0	0	0.00	0
20070404	33	14.75	0.30	0.89	1.33	1.62					0	0	0.00	0
20070415	32	14.30	0.29	0.86	1.29	1.57					0	0	0.00	0
20070416	28	12.52	0.25	0.75	1.13	1.38					0	0	0.00	0.00
20070508	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20070603	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20070629	32	14.30	0.29	0.86	1.29	1.57					0	0	0.00	0
20070701	28	12.52	0.25	0.75	1.13	1.38					0	0	0.00	0
20070711	25	11.18	0.22	0.67	1.01	1.23					0		0.00	0.00
20070720	38	16.99	0.34	1.02	1.53	1.87					0	0	0.00	0
20070806	23	10.28	0.21	0.62	0.93	1.13					0		0.00	0.00
20070816	25	11.18	0.22	0.67	1.01	1.23					0		0.00	0.00
20070817	41	18.33	0.37	1.10	1.65	2.02					0	0	0.00	0
20070824	26	11.62	0.23	0.70	1.05	1.28					0		0.00	0.00
20071115	25	11.18	0.22	0.67	1.01	1.23					0		0.00	0.00
								Subtotal	0	0 g/yr	0 g/d	0 g/yr	0 g/yr	0 g/d
								Annual Emission Rate		0 g/yr 0.00E+00 ton/yr	Annual Emission Rate		0 g/yr 0.00E+00 ton/yr	
								24 Hour Emission Rate		0 g/d 0.00 ton/yr	24 Hour Emission Rate		0 g/d 0.00E+00 ton/yr	

The shape (Trapezoidal-elevated plane) of the inactive pile is such that no contours of 0.9 or greater will occur on the pile. None of the 0.2 or 0.6 contours exceed the 1.12 threshold velocity. Wind erosion emission from the inactive pile are therefore zero.

InActive PRB Coal Storage Pile Emission Calculations - Source A6

Area Emission Rate (Drop Point Emissions and Wind Erosion)

Basis	Value	Reference
PM_{10} Drop Point Emission Rate	3.28E-02 ton/yr	See calculation 6
$PM_{2.5}$ Drop Point Emission Rate	4.97E-03 ton/yr	See calculation 6
PM_{10} Annual Emission Rate-Wind Erosion	0.00E+00 ton/yr	See calculation above
$PM_{2.5}$ Annual Emission Rate-Wind Erosion	0.00E+00 ton/yr	See calculation above
PM_{10} 24-Hr Emission Rate-Wind Erosion	0.00E+00 ton/yr	See calculation above
$PM_{2.5}$ 24-Hr Emission Rate-Wind Erosion	0.00E+00 ton/yr	See calculation above
Area at Half Height- Modeled Area	48,589 m^2	See calculation above

PM_{10} Emission Rate- Annual

3.28E-02 ton/yr + 0.00E+00 ton/yr = 3.28E-02 ton/yr

3.28E-02 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 48,589 m^2 = **1.94E-08 g/(s-m^2)**

$PM_{2.5}$ Emission Rate- Annual

4.97E-03 ton/yr + 0.00E+00 ton/yr = 4.97E-03 ton/yr

4.97E-03 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 48,589 m^2 = **2.94E-09 g/(s-m^2)**

PM_{10} Emission Rate- 24-Hr

3.28E-02 ton/yr + 0.00E+00 ton/yr = 3.28E-02 ton/yr

3.28E-02 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 48,589 m^2 = **1.94E-08 g/(s-m^2)**

$PM_{2.5}$ Emission Rate- 24-Hr

4.97E-03 ton/yr + 0.00E+00 ton/yr = 4.97E-03 ton/yr

4.97E-03 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 48,589 m^2 = **2.94E-09 g/(s-m^2)**

9 InActive Illinois No. 6 Coal Storage Pile Emission Calculations - Source A7

Basis	Value		Reference
Pile Volume	9,465,546	ft^3	Plant Washington Specification- Based on Trapezoidal-elevated Plane Shape
Base Width	750	ft	Plant Washington Specification
Base length	550	ft	Plant Washington Specification
Top Width	676	ft	Plant Washington Specification
Top length	476	ft	Plant Washington Specification
Pile Height	25.9	ft	Plant Washington Specification
Threshold Velocity	1.12	m/s	Table 13.2.5-2 AP-42 for wind erosion from piles
Surface Area	431,063 ft^2 =	40,043 m^2	

Modeled Area at top of pile: 676 ft * 476 ft = 321,874 ft^2 = 29,900 m^2

Pile B2 from Fig 13..2.5-2 is the selected Pile Configuration for wind contours because the prevailing wind is WNW. According to the figure, the maximum shear velocity is 1.1 times ten percent of the prevailing wind; therefore, wind erosion occurs whenever the fastest 2 minute wind exceeds the following value:

$$V = \frac{1.12}{0.11} = 10.2 \text{ m/s} = 22.78 \text{ mph}$$

Sample Calculation:
Erosion Potentials were calculated for the dates where the normalized wind surface wind speeds exceeded the threshold velocity for uncrusted coal piles (1.12 m/s)
Erosion Potential ((AP-42, 13.2.5-3, Equation 3)
$P=58(u^*-u^*_t)^2+25(u^*-u^*_t)$ g/m^2
where:
P = Erosion Potential
u^* = Friction velocity = 0.1 u
u^*_t = Threshold Friction Velocity
u_s = Surface Wind Speed
u_t = Approach Wind Speed
December 1, 2006 - 1.1 Wind Contour

$$P = 58 * (1.13 - 1.12)^2 + 25 * (1.13 - 1.12) = 0.28 \text{ g/m}^2$$

Emissions are computed by multiplying the Erosion Potential by the surface area of the pile, the Aerodynamic Particle Size Multiplier to speciate the PM size, and the fraction of the pile subarea that is subject to a specified wind contour. Emissions from the pile are controlled to 90% by dust suppressant

Emission rates multiplied by k = 0.5 to reduce emissions to just PM_{10} and k = 0.075 to $PM_{2.5}$ (AP-42, 13.2.5-3)
Fraction of Pile Subarea Subject to 0.9 Contour of Normalized Surface Wind Speed = 0.0
Fraction of Pile Subarea Subject to 1.1 Contour of Normalized Surface Wind Speed = 0.0
December 1, 2006 - PM10 Emissions for 1.1 Wind Contour

$$0.28 \text{ g/m}^2 * 40{,}043 \text{ m}^2 * 0.5 * 0 * \frac{(100\%-90\%)}{100\%} = 0.00 \text{ g/d}$$

InActive Illinois No. 6 Coal Storage Pile Emission Calculations - Source A7

Daily records of fastest mile from 12/1/06 through 11/30/07 and it exceeded the calculated threshold on the following dates:(10 m anemometer)

	Wind Speed	Wind Speed	Normalized Surface Wind Speeds				Erosion Potential $P=58(u^*-u^*_t)^2+25(u^*-u^*_t)$ g/m^2 (AP-42, 13.2.5-3, Equation 3)		Daily PM_{10} Erosion Potential		Daily PM_{10} Erosion Potential Summation	Daily $PM_{2.5}$ Erosion Potential		Daily $PM_{2.5}$ Erosion Potential Summation
Date	mph	m/s	$u_t/u_t = 0.2$	$u_t/u_t = 0.6$	$u_t/u_t = 0.9$	$u_t/u_t = 1.1$	P(0.9)	P(1.1)	P(0.9)	P(1.1)		P(0.9)	P(1.1)	
20061201	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20061207	24	10.73	0.21	0.64	0.97	1.18					0		0.00	0.00
20061225	26	11.62	0.23	0.70	1.05	1.28					0		0.00	0.00
20061226	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20061231	24	10.73	0.21	0.64	0.97	1.18					0		0.00	0.00
20070108	23	10.28	0.21	0.62	0.93	1.13					0		0.00	0.00
20070109	28	12.52	0.25	0.75	1.13	1.38					0	0.00	0.00	0
20070128	24	10.73	0.21	0.64	0.97	1.18					0		0.00	0.00
20070213	31	13.86	0.28	0.83	1.25	1.52					0	0	0.00	0
20070218	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20070301	32	14.30	0.29	0.86	1.29	1.57					0	0	0.00	0
20070302	30	13.41	0.27	0.80	1.21	1.48					0	0	0.00	0
20070316	29	12.96	0.26	0.78	1.17	1.43					0	0	0.00	0
20070404	33	14.75	0.30	0.89	1.33	1.62					0	0	0.00	0
20070415	32	14.30	0.29	0.86	1.29	1.57					0	0	0.00	0
20070416	28	12.52	0.25	0.75	1.13	1.38					0	0	0.00	0.00
20070508	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20070603	23	10.28	0.21	0.62	0.93	1.13					0.00		0.00	0.00
20070629	32	14.30	0.29	0.86	1.29	1.57					0	0	0.00	0
20070701	28	12.52	0.25	0.75	1.13	1.38					0	0	0.00	0
20070711	25	11.18	0.22	0.67	1.01	1.23					0		0.00	0.00
20070720	38	16.99	0.34	1.02	1.53	1.87					0	0	0.00	0
20070806	23	10.28	0.21	0.62	0.93	1.13					0		0.00	0.00
20070816	25	11.18	0.22	0.67	1.01	1.23					0		0.00	0.00
20070817	41	18.33	0.37	1.10	1.65	2.02					0	0	0.00	0
20070824	26	11.62	0.23	0.70	1.05	1.28					0		0.00	0.00
20071115	25	11.18	0.22	0.67	1.01	1.23					0		0.00	0.00
								Subtotal	0 g/yr	0 g/yr	0 g/d	0 g/yr	0 g/yr	0 g/d
								Annual Emission Rate		0 g/yr 0.00E+00 ton/yr	**Annual Emission Rate**		0 g/yr 0.00E+00 ton/yr	
								24 Hour Emission Rate		0 g/d 0.00 ton/yr	**24 Hour Emission Rate**		0 g/d 0.00E+00 ton/yr	

The shape (Trapezoidal-elevated plane) of the inactive pile is such that no contours of 0.9 or greater will occur on the pile. None of the 0.2 or 0.6 contours exceed the 1.12 threshold velocity. Wind erosion emission from the inactive pile are therefore zero.

InActive Illinois No. 6 Coal Storage Pile Emission Calculations - Source A7

Area Emission Rate (Drop Point Emissions and Wind Erosion)

Basis	Value	Reference
PM_{10} Drop Point Emission Rate	1.50E-01 ton/yr	See calculation 6
$PM_{2.5}$ Drop Point Emission Rate	2.27E-02 ton/yr	See calculation 6
PM_{10} Annual Emission Rate-Wind Erosion	0.00E+00 ton/yr	See calculation above
$PM_{2.5}$ Annual Emission Rate-Wind Erosion	0.00E+00 ton/yr	See calculation above
PM_{10} 24-Hr Emission Rate-Wind Erosion	0.00E+00 ton/yr	See calculation above
$PM_{2.5}$ 24-Hr Emission Rate-Wind Erosion	0.00E+00 ton/yr	See calculation above
Area at Half Height- Modeled Area	29,900 m^2	See calculation above

PM_{10} Emission Rate- Annual

1.50E-01 ton/yr + 0.00E+00 ton/yr = 1.50E-01 ton/yr

1.50E-01 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 29,900 m^2 = 1.44E-07 g/(s-m^2)

$PM_{2.5}$ Emission Rate- Annual

2.27E-02 ton/yr + 0.00E+00 ton/yr = 2.27E-02 ton/yr

2.27E-02 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 29,900 m^2 = 2.18E-08 g/(s-m^2)

PM_{10} Emission Rate- 24-Hr

1.50E-01 ton/yr + 0.00E+00 ton/yr = 1.50E-01 ton/yr

1.50E-01 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 29,900 m^2 = 1.44E-07 g/(s-m^2)

$PM_{2.5}$ Emission Rate- 24-Hr

2.27E-02 ton/yr + 0.00E+00 ton/yr = 2.27E-02 ton/yr

2.27E-02 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 29,900 m^2 = 2.18E-08 g/(s-m^2)

Completed by: BSA 11/26/2008
Checked by: SAK 11/26/2008

10 Active PRB Coal Storage Pile Emission Calculations - Source A8

Basis	Value		Reference
Pile Volume	2,137,605	ft^3	Plant Washington Specification
Pile Diameter	286	feet	Plant Washington Specification
Threshold Velocity	1.12	m/s	Table 13.2.5-2 AP-42 for wind erosion from piles

Pile Dimension Calculations

Assumed cone shape V=1/3*h*Area of base

Surface Area = 1/2*(perimeter of base* slant height)

slant height = $SQRT(h^2+(L/2)^2)$

Area of Base π * 286 ft ^ 2 / 4 = 64,242 ft^2

Height 3 * 2,137,605 ft^3 / 64,242 ft^2 = 100 ft

Radius at Half Height 71.30 ft

Area at Half Height 15,963 ft^2 = 1,483 m^2

Slant Height $SQRT\left(143\ ft^2 + 100\ ft^2 \right)$ = 174 ft

Surface Area $\left(\left(\pi * 286\ ft \right) * 174\ ft \right) * 0.5$ = 78,346 ft^2 = 7,278 m^2

Pile B2 from Fig 13..2.5-2 is the selected Pile Configuration for wind contours because the prevailing wind is WNW. According to the figure, the maximum shear velocity is 1.1 times ten percent of the prevailing wind; therefore, wind erosion occurs whenever the fastest 2 minute wind exceeds the following value:

$$V = \frac{1.12}{0.11} = 10.2\ m/s = 22.78\ mph$$

Sample Calculation:

Erosion Potentials were calculated for the dates where the normalized wind surface wind speeds exceeded the threshold velocity for uncrusted coal piles (1.12 m/s)

Erosion Potential ((AP-42, 13.2.5-3, Equation 3)

$P=58(u^*-u^*_t)^2+25(u^*-u^*_t)\ g/m^2$

where:

P = Erosion Potential

u^* = Friction velocity = 0.1 u

u^*_t = Threshold Friction Velocity

u_s = Surface Wind Speed

u_r = Approach Wind Speed

December 1, 2006 - 1.1 Wind Contour

$$P = 58 * (1.13 - 1.12)^2 + 25 * (1.13 - 1.12) = 0.28\ g/m^2$$

Emissions are computed by multiplying the Erosion Potential by the surface area of the pile, the Aerodynamic Particle Size Multiplier to speciate the PM size, and the fraction of the pile subarea that is subject to a specified wind contour. Emissions from the pile are controlled to 90% by dust suppressant

Emission rates multiplied by k = 0.5 to reduce emissions to just PM_{10} and k = 0.075 to $PM_{2.5}$ (AP-42, 13.2.5-3)

Fraction of Pile Subarea Subject to 0.9 Contour of Normalized Surface Wind Speed = 0.17

Fraction of Pile Subarea Subject to 1.1 Contour of Normalized Surface Wind Speed = 0.024

December 1, 2006 - PM10 Emissions for 1.1 Wind Contour

$$0.28\ g/m^2 * 7{,}278\ m^2 * 0.5 * 0.024 * \frac{(100\%-90\%)}{100\%} = 2.45\ g/d$$

Active PRB Coal Storage Pile Emission Calculations - Source A8

Daily records of fastest mile from 12/1/06 through 11/30/07 and it exceeded the calculated threshold on the following dates:(10 m anemometer)

	Wind Speed	Wind Speed	Normalized Surface Wind Speeds				Erosion Potential $P=58(u^*-u^*_t)^2+25(u^*-u^*_t)$ g/m^2 (AP-42, 13.2.5-3, Equation 3)		Daily PM_{10} Erosion Potential		Daily PM_{10} Erosion Potential Summation	Daily $PM_{2.5}$ Erosion Potential		Daily $PM_{2.5}$ Erosion Potential Summation
Date	mph	m/s	$u_s/u_t = 0.2$	$u_s/u_t = 0.6$	$u_s/u_t = 0.9$	$u_s/u_t = 1.1$	P(0.9)	P(1.1)	P(0.9)	P(1.1)		P(0.9)	P(1.1)	
20061201	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20061207	24	10.73	0.21	0.64	0.97	1.18		1.71		15	15		2.24	2.24
20061225	26	11.62	0.23	0.70	1.05	1.28		5.42		47	47		7.10	7.10
20061226	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20061231	24	10.73	0.21	0.64	0.97	1.18		1.71		15	15		2.24	2.24
20070108	23	10.28	0.21	0.62	0.93	1.13		0.28		2	2		0.37	0.37
20070109	28	12.52	0.25	0.75	1.13	1.38	0.16	10.25	10.18	89	100	1.53	13.42	15
20070128	24	10.73	0.21	0.64	0.97	1.18		1.71		15	15		2.24	2.24
20070213	31	13.86	0.28	0.83	1.25	1.52	4.12	19.59	255	171	426	38	25.7	64
20070218	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20070301	32	14.30	0.29	0.86	1.29	1.57	5.81	23.27	359	203	563	54	30.5	84
20070302	30	13.41	0.27	0.80	1.21	1.48	2.61	16.20	162	141	303	24	21.2	45
20070316	29	12.96	0.26	0.78	1.17	1.43	1.29	13.08	80	114	194	12	17.1	29
20070404	33	14.75	0.30	0.89	1.33	1.62	7.69	27.22	476	238	714	71	35.7	107
20070415	32	14.30	0.29	0.86	1.29	1.57	5.81	23.27	359	203	563	54	30.5	84
20070416	28	12.52	0.25	0.75	1.13	1.38	0.16	10.25	10.18	89	100	1.53	13.42	14.95
20070508	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20070603	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20070629	32	14.30	0.29	0.86	1.29	1.57	5.81	23.27	359	203	563	54	30.5	84
20070701	28	12.52	0.25	0.75	1.13	1.38	0.16	10.25	10.18	89	100	1.53	13.42	15
20070711	25	11.18	0.22	0.67	1.01	1.23		3.43		30	30		4.49	4.49
20070720	38	16.99	0.34	1.02	1.53	1.87	19.91	51.21	1,232	447	1,679	185	67.1	252
20070806	23	10.28	0.21	0.62	0.93	1.13		0.28		2	2		0.37	0.37
20070816	25	11.18	0.22	0.67	1.01	1.23		3.43		30	30		4.49	4.49
20070817	41	18.33	0.37	1.10	1.65	2.02	29.50	68.97	1,825	602	2,427	274	90.4	364
20070824	26	11.62	0.23	0.70	1.05	1.28		5.42		47	47		7.10	7.10
20071115	25	11.18	0.22	0.67	1.01	1.23		3.43		30	30		4.49	4.49
							Subtotal		5,138	2,839 g/yr	2,427 g/d	771 g/yr	426 g/yr	364 g/d
							Annual Emission Rate			7,977 g/yr	**Annual Emission Rate**		**1,196 g/yr**	
										8.79E-03 ton/yr			1.32E-03 ton/yr	
							24 Hour Emission Rate			2,427 g/d	**24 Hour Emission Rate**		364 g/d	
										0.98 ton/yr			1.46E-01 ton/yr	

Active PRB Coal Storage Pile Emission Calculations - Source A8

Area Emission Rate (Drop Point Emissions and Wind Erosion)

Basis	Value	Reference
PM_{10} Drop Point Emission Rate	3.28E-02 ton/yr	See calculation 6
$PM_{2.5}$ Drop Point Emission Rate	4.97E-03 ton/yr	See calculation 6
PM_{10} Annual Emission Rate-Wind Erosion	8.79E-03 ton/yr	See calculation above
$PM_{2.5}$ Annual Emission Rate-Wind Erosion	1.32E-03 ton/yr	See calculation above
PM_{10} 24-Hr Emission Rate-Wind Erosion	9.77E-01 ton/yr	See calculation above
$PM_{2.5}$ 24-Hr Emission Rate-Wind Erosion	1.46E-01 ton/yr	See calculation above
Area at Half Height- Modeled Area	1,483 m^2	See calculation above

PM_{10} Emission Rate- Annual

3.28E-02 ton/yr + 8.79E-03 ton/yr = 4.16E-02 ton/yr

4.16E-02 ton/yr * (2000 lb/ton / 8760 hr/yr) * (453.6 g/lb / 3600 sec/hr) / 1,483 m^2 = **8.07E-07 g/(s-m^2)**

$PM_{2.5}$ Emission Rate- Annual

4.97E-03 ton/yr + 1.32E-03 ton/yr = 6.29E-03 ton/yr

6.29E-03 ton/yr * (2000 lb/ton / 8760 hr/yr) * (453.6 g/lb / 3600 sec/hr) / 1,483 m^2 = **1.22E-07 g/(s-m^2)**

PM_{10} Emission Rate- 24-Hr

3.28E-02 ton/yr + 9.77E-01 ton/yr = 1.01E+00 ton/yr

1.01E+00 ton/yr * (2000 lb/ton / 8760 hr/yr) * (453.6 g/lb / 3600 sec/hr) / 1,483 m^2 = **1.96E-05 g/(s-m^2)**

$PM_{2.5}$ Emission Rate- 24-Hr

4.97E-03 ton/yr + 1.46E-01 ton/yr = 1.51E-01 ton/yr

1.51E-01 ton/yr * (2000 lb/ton / 8760 hr/yr) * (453.6 g/lb / 3600 sec/hr) / 1,483 m^2 = **2.94E-06 g/(s-m^2)**

11 Active Illinois No. 6 Coal Storage Pile Emission Calculations - Source A9

Basis	Value		Reference
Pile Volume	2,137,605	ft^3	Plant Washington Specification
Pile Diameter	286	feet	Plant Washington Specification
Threshold Velocity	1.12	m/s	Table 13.2.5-2 AP-42 for wind erosion from piles
N	365	days	Daily fresh coal applied to the Main Inactive pile

Pile Dimension Calculations

Assumed cone shape V=1/3*h*Area of base

Surface Area = 1/2*(perimeter of base* slant height)

slant height = $SQRT(h^2+(L/2)^2)$

Area of Base π * 286 ft ^ 2 / 4 = 64,242 ft^2

Height 3 * 2,137,605 ft^3 / 64,242 ft^2 = 100 ft

Radius at Half Height 71.30 ft

Area at Half Height 15,963 ft^2 = 1,483 m^2

Slant Height $SQRT\left[143\text{ ft}^{2} + 100\text{ ft}^{2} \right]$ = 174 ft

Surface Area $\left(\left[\pi * 286\text{ ft} \right] * 174\text{ ft} * 0.5 \right)$ = 78,346 ft^2 = 7,278 m^2

Pile B2 from Fig 13..2.5-2 is the selected Pile Configuration for wind contours because the prevailing wind is WNW. According to the figure, the maximum shear velocity is 1.1 times ten percent of the prevailing wind; therefore, wind erosion occurs whenever the fastest 2 minute wind exceeds the following value:

$$V = \frac{1.12}{0.11} = 10.2\text{ m/s} = 22.78\text{ mph}$$

Sample Calculation:

Erosion Potentials were calculated for the dates where the normalized wind surface wind speeds exceeded the threshold velocity for uncrusted coal piles (1.12 m/s)

Erosion Potential ((AP-42, 13.2.5-3, Equation 3)

$P=58(u^*-u^*_t)^2+25(u^*-u^*_t)$ g/m^2

where:

P = Erosion Potential

u^* = Friction velocity = 0.1 u

u^*_t = Threshold Friction Velocity

u_s = Surface Wind Speed

u_t = Approach Wind Speed

December 1, 2006 - 1.1 Wind Contour

P = 58 * $(1.13 - 1.12)^2$ + 25 * (1.13 - 1.12) = 0.28 g/m^2

Emissions are computed by multiplying the Erosion Potential by the surface area of the pile, the Aerodynamic Particle Size Multiplier to speciate the PM size, and the fraction of the pile subarea that is subject to a specified wind contour. Emissions from the pile are controlled to 90% by dust suppressant

Emission rates multiplied by k = 0.5 to reduce emissions to just PM_{10} and k = 0.075 to $PM_{2.5}$ (AP-42, 13.2.5-3)

Fraction of Pile Subarea Subject to 0.9 Contour of Normalized Surface Wind Speed = 0.17

Fraction of Pile Subarea Subject to 1.1 Contour of Normalized Surface Wind Speed = 0.024

December 1, 2006 - PM10 Emissions for 1.1 Wind Contour

$$0.28\text{ g/m}^2 * 7{,}278\text{ m}^2 * 0.5 * 0.024 * \frac{(100\%-90\%)}{100\%} = 2.45\text{ g/d}$$

Active Illinois No. 6 Coal Storage Pile Emission Calculations - Source A9

Daily records of fastest mile from 12/1/06 through 11/30/07 and it exceeded the calculated threshold on the following dates:(10 m anemometer)

	Wind Speed	Wind Speed	Normalized Surface Wind Speeds				Erosion Potential $P=58(u^*-u^*_t)^2+25(u^*-u^*_t)$ g/m^2 (AP-42, 13.2.5-3, Equation 3)		Daily PM_{10} Erosion Potential		Daily PM_{10} Erosion Potential Summation	Daily $PM_{2.5}$ Erosion Potential		Daily $PM_{2.5}$ Erosion Potential Summation
Date	mph	m/s	$u_s/u_t = 0.2$	$u_s/u_t = 0.6$	$u_s/u_t = 0.9$	$u_s/u_t = 1.1$	P(0.9)	P(1.1)	P(0.9)	P(1.1)		P(0.9)	P(1.1)	
20061201	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20061207	24	10.73	0.21	0.64	0.97	1.18		1.71		15	15		2.24	2.24
20061225	26	11.62	0.23	0.70	1.05	1.28		5.42		47	47		7.10	7.10
20061226	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20061231	24	10.73	0.21	0.64	0.97	1.18		1.71		15	15		2.24	2.24
20070108	23	10.28	0.21	0.62	0.93	1.13		0.28		2	2		0.37	0.37
20070109	28	12.52	0.25	0.75	1.13	1.38	0.16	10.25	10.18	89	100	1.53	13.42	15
20070128	24	10.73	0.21	0.64	0.97	1.18		1.71		15	15		2.24	2.24
20070213	31	13.86	0.28	0.83	1.25	1.52	4.12	19.59	255	171	426	38	25.7	64
20070218	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20070301	32	14.30	0.29	0.86	1.29	1.57	5.81	23.27	359	203	563	54	30.5	84
20070302	30	13.41	0.27	0.80	1.21	1.48	2.61	16.20	162	141	303	24	21.2	45
20070316	29	12.96	0.26	0.78	1.17	1.43	1.29	13.08	80	114	194	12	17.1	29
20070404	33	14.75	0.30	0.89	1.33	1.62	7.69	27.22	476	238	714	71	35.7	107
20070415	32	14.30	0.29	0.86	1.29	1.57	5.81	23.27	359	203	563	54	30.5	84
20070416	28	12.52	0.25	0.75	1.13	1.38	0.16	10.25	10.18	89	100	1.53	13.42	14.95
20070508	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20070603	23	10.28	0.21	0.62	0.93	1.13		0.28		2.45	2.45		0.37	0.37
20070629	32	14.30	0.29	0.86	1.29	1.57	5.81	23.27	359	203	563	54	30.5	84
20070701	28	12.52	0.25	0.75	1.13	1.38	0.16	10.25	10.18	89	100	1.53	13.42	15
20070711	25	11.18	0.22	0.67	1.01	1.23		3.43		30	30		4.49	4.49
20070720	38	16.99	0.34	1.02	1.53	1.87	19.91	51.21	1,232	447	1,679	185	67.1	252
20070806	23	10.28	0.21	0.62	0.93	1.13		0.28		2	2		0.37	0.37
20070816	25	11.18	0.22	0.67	1.01	1.23		3.43		30	30		4.49	4.49
20070817	41	18.33	0.37	1.10	1.65	2.02	29.50	68.97	1,825	602	2,427	274	90.4	364
20070824	26	11.62	0.23	0.70	1.05	1.28		5.42		47	47		7.10	7.10
20071115	25	11.18	0.22	0.67	1.01	1.23		3.43		30	30		4.49	4.49
							Subtotal		5,138 g/yr	2,839 g/yr	2,427 g/d	771 g/yr	426 g/yr	364 g/d
							Annual Emission Rate			7,977 g/yr	**Annual Emission Rate**		1,196 g/yr	
										8.79E-03 ton/yr			1.32E-03 ton/yr	
							24 Hour Emission Rate			2,427 g/d	**24 Hour Emission Rate**		364 g/d	
										0.98 ton/yr			1.46E-01 ton/yr	

Active Illinois No. 6 Coal Storage Pile Emission Calculations - Source A9

Area Emission Rate (Drop Point Emissions and Wind Erosion)

Basis	Value	Reference
PM_{10} Drop Point Emission Rate	1.50E-01 ton/yr	See calculation 6
$PM_{2.5}$ Drop Point Emission Rate	2.27E-02 ton/yr	See calculation 6
PM_{10} Annual Emission Rate-Wind Erosion	8.79E-03 ton/yr	See calculation above
$PM_{2.5}$ Annual Emission Rate-Wind Erosion	1.32E-03 ton/yr	See calculation above
PM_{10} 24-Hr Emission Rate-Wind Erosion	9.77E-01 ton/yr	See calculation above
$PM_{2.5}$ 24-Hr Emission Rate-Wind Erosion	1.46E-01 ton/yr	See calculation above
Area at Half Height- Modeled Area	1,483 m^2	See calculation above

PM_{10} Emission Rate- Annual

1.50E-01 ton/yr + 8.79E-03 ton/yr = 1.59E-01 ton/yr

1.59E-01 ton/yr * (2000 lb/ton / 8760 hr/yr) * (453.6 g/lb / 3600 sec/hr) / 1,483 m^2 = **3.08E-06 g/(s-m^2)**

$PM_{2.5}$ Emission Rate- Annual

2.27E-02 ton/yr + 1.32E-03 ton/yr = 2.40E-02 ton/yr

2.40E-02 ton/yr * (2000 lb/ton / 8760 hr/yr) * (453.6 g/lb / 3600 sec/hr) / 1,483 m^2 = **4.66E-07 g/(s-m^2)**

PM_{10} Emission Rate- 24-Hr

1.50E-01 ton/yr + 9.77E-01 ton/yr = 1.13E+00 ton/yr

1.13E+00 ton/yr * (2000 lb/ton / 8760 hr/yr) * (453.6 g/lb / 3600 sec/hr) / 1,483 m^2 = **2.19E-05 g/(s-m^2)**

$PM_{2.5}$ Emission Rate- 24-Hr

2.27E-02 ton/yr + 1.46E-01 ton/yr = 1.69E-01 ton/yr

1.69E-01 ton/yr * (2000 lb/ton / 8760 hr/yr) * (453.6 g/lb / 3600 sec/hr) / 1,483 m^2 = **3.28E-06 g/(s-m^2)**

12 Limestone Storage Pile Emission Calculations -Source A10

Basis	Value		Reference
Pile Volume	461,723	ft^3	Plant Washington Specification
Pile Base Diameter	172	feet	Plant Washington Specification
Threshold Velocity	1.33	m/s	Table 13.2.5-2 AP-42 for wind erosion from piles
N	365	days	Daily fresh coal applied to the Main Inactive pile

Pile Dimension Calculations

Assumed cone shape V=1/3*h*Area of base

Surface Area = 1/2*(perimeter of base* slant height)

slant height = $SQRT(h^2+(L/2)^2)$

Area of Base π * 172 ft ^ 2 / 4 = 23,235 ft^2

Height 3 * 461,723 ft^3 / 23,235 ft^2 = 60 ft

Radius at Half Height 42.58 ft

Area at Half Height 5,694 ft^2 = 529 m^2

Slant Height $SQRT\left[86\ ft^2 + 60\ ft^2 \right]$ = 105 ft

Surface Area $\left(\left[\pi * 172\ ft \right] * 105\ ft * 0.5 \right)$ = 28,272 ft^2 = 2,626 m^2

Pile B2 from Fig 13..2.5-2 is the selected Pile Configuration for wind contours because the prevailing wind is WNW. According to the figure, the maximum shear velocity is 1.1 times ten percent of the prevailing wind; therefore, wind erosion occurs whenever the fastest 2 minute wind exceeds the following value:

$$V = \frac{1.33}{0.11} = 12.1\ m/s = 27.05\ mph$$

Sample Calculation:

Erosion Potentials were calculated for the dates where the normalized wind surface wind speeds exceeded the threshold velocity for a limestone pile (1.33 m/s)

Erosion Potential ((AP-42, 13.2.5-3, Equation 3)

$P=58(u^*-u^*_t)^2+25(u^*-u^*_t)\ g/m^2$

where:

P = Erosion Potential

u^* = Friction velocity = 0.1 u

u^*_t = Threshold Friction Velocity

u_s = Surface Wind Speed

u_t = Approach Wind Speed

January 9, 2007 - 1.1 Wind Contour

$P = 58 * (1.38 - 1.33)^2 + 25 * (1.38 - 1.33) = 1.30\ g/m^2$

Emissions are computed by multiplying the Erosion Potential by the surface area of the pile, the Aerodynamic Particle Size Multiplier to speciate the PM size, and the fraction of the pile subarea that is subject to a specified wind contour. Emissions from the pile are controlled to 90% by dust suppressant

Emission rates multiplied by k = 0.5 to reduce emissions to just PM_{10} and k = 0.075 to $PM_{2.5}$ (AP-42, 13.2.5-3)

Fraction of Pile Subarea Subject to 0.9 Contour of Normalized Surface Wind Speed = 0.17

Fraction of Pile Subarea Subject to 1.1 Contour of Normalized Surface Wind Speed = 0.024

January 9, 2007 - PM10 Emissions for 1.1 Wind Contour

$$1.30\ g/m^2 * 2{,}626\ m^2 * 0.5 * 0.024 * \frac{(100\%-90\%)}{100\%} = 4\ g/d$$

Limestone Storage Pile Emission Calculations -Source A10

Daily records of fastest mile from 12/1/06 through 11/30/07 and it exceeded the calculated threshold on the following dates:(10 m anemometer)

	Wind Speed	Wind Speed	Normalized Surface Wind Speeds				Erosion Potential $P=58(u^*-u^*_t)^2+25(u^*-u^*_t)$ g/m^2 (AP-42, 13.2.5-3, Equation 3)		Daily PM_{10} Erosion Potential		Daily PM_{10} Erosion Potential Summation	Daily $PM_{2.5}$ Erosion Potential		Daily $PM_{2.5}$ Erosion Potential Summation
Date	mph	m/s	$u_t/u_* = 0.2$	$u_t/u_* = 0.6$	$u_t/u_* = 0.9$	$u_t/u_* = 1.1$	P(0.9)	P(1.1)	P(0.9)	P(1.1)		P(0.9)	P(1.1)	
20061201	23	10.28	0.21	0.62	0.93	1.13								
20061207	24	10.73	0.21	0.64	0.97	1.18								
20061225	26	11.62	0.23	0.70	1.05	1.28								
20061226	23	10.28	0.21	0.62	0.93	1.13								
20061231	24	10.73	0.21	0.64	0.97	1.18								
20070108	23	10.28	0.21	0.62	0.93	1.13								
20070109	28	12.52	0.25	0.75	1.13	1.38		1.30		4	4		0.61	0.61
20070128	24	10.73	0.21	0.64	0.97	1.18								
20070213	31	13.86	0.28	0.83	1.25	1.52		7.05		22	22		3.33	3.33
20070218	23	10.28	0.21	0.62	0.93	1.13								
20070301	32	14.30	0.29	0.86	1.29	1.57		9.53		30	30		4.50	4.50
20070302	30	13.41	0.27	0.80	1.21	1.48		4.85		15	15		2.29	2.29
20070316	29	12.96	0.26	0.78	1.17	1.43		2.93		9	9		1.39	1.39
20070404	33	14.75	0.30	0.89	1.328	1.62		12.29		39	39		5.81	5.81
20070415	32	14.30	0.29	0.86	1.29	1.57		9.53		30	30		4.50	4.50
20070416	28	12.52	0.25	0.75	1.13	1.38		1.30		4	4		0.61	0.61
20070508	23	10.28	0.21	0.62	0.93	1.13								
20070603	23	10.28	0.21	0.62	0.93	1.13								
20070629	32	14.30	0.29	0.86	1.29	1.57		9.53		30	30		4.50	4.50
20070701	28	12.52	0.25	0.75	1.13	1.38		1.30		4	4		0.61	0.61
20070711	25	11.18	0.22	0.67	1.01	1.23								
20070720	38	16.99	0.34	1.02	1.53	1.87	7.26	30.28	162	95	258	24	14	39
20070806	23	10.28	0.21	0.62	0.93	1.13								
20070816	25	11.18	0.22	0.67	1.01	1.23								
20070817	41	18.33	0.37	1.10	1.65	2.02	13.91	44.45	310	140	451	47	21	68
20070824	26	11.62	0.23	0.70	1.05	1.28								
20071115	25	11.18	0.22	0.67	1.01	1.23								
								Subtotal	473 g/yr	423 g/yr	451 g/d	71 g/yr	64 g/yr	68 g/d
								Annual Emission Rate		896 g/yr	**Annual Emission Rate**		134 g/yr	
										9.88E-04 ton/yr			1.48E-04 ton/yr	
								24 Hour Emission Rate		451 g/d	**24 Hour Emission Rate**		68 g/d	
										0.18 ton/yr			2.72E-02 ton/yr	

Limestone Storage Pile Emission Calculations -Source A10

Area Emission Rate (Drop Point Emissions and Wind Erosion)

Basis	Value	Reference
PM_{10} Drop Point Emission Rate	1.63E-02 ton/yr	See calculation 6
$PM_{2.5}$ Drop Point Emission Rate	2.47E-03 ton/yr	See calculation 6
PM_{10} Annual Emission Rate-Wind Erosion	9.88E-04 ton/yr	See calculation above
$PM_{2.5}$ Annual Emission Rate-Wind Erosion	1.48E-04 ton/yr	See calculation above
PM_{10} 24-Hr Emission Rate-Wind Erosion	1.81E-01 ton/yr	See calculation above
$PM_{2.5}$ 24-Hr Emission Rate-Wind Erosion	2.72E-02 ton/yr	See calculation above
Area at Half Height- Modeled Area	529 m^2	See calculation above

PM_{10} Emission Rate- Annual

1.63E-02 ton/yr + 9.88E-04 ton/yr = 1.73E-02 ton/yr

1.73E-02 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 529 m^2 = **9.42E-07 g/(s-m^2)**

$PM_{2.5}$ Emission Rate- Annual

2.47E-03 ton/yr + 1.48E-04 ton/yr = 2.62E-03 ton/yr

2.62E-03 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 529 m^2 = **1.43E-07 g/(s-m^2)**

PM_{10} Emission Rate- 24-Hr

1.63E-02 ton/yr + 1.81E-01 ton/yr = 1.98E-01 ton/yr

1.98E-01 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 529 m^2 = **1.07E-05 g/(s-m^2)**

$PM_{2.5}$ Emission Rate- 24-Hr

2.47E-03 ton/yr + 2.72E-02 ton/yr = 2.97E-02 ton/yr

2.97E-02 ton/yr * 2000 lb/ton / 8760 hr/yr * 453.6 g/lb / 3600 sec/hr / 529 m^2 = **1.61E-06 g/(s-m^2)**

13 Total Vehicle Miles Traveled for Paved Road

Basis	Value	Units	Reference
Daily Number of Trucks	126	Trucks	Plant Washington Specification
Length of Paved Road	0.380	Miles	Plant Washington Specification
Number of Trips on Road	2		Accounts for Distance to and from Solid Materials Handling Facility

Total Vehicle Miles Traveled to and from Land Fill

126 Trucks/day * 0.380 Miles/Truck * 2 = 95.73 miles/day

95.73 miles/day * 365 days/year = 34,943 miles/year

14 Fugitive Emission Calculations for Paved Road - Source P1-P21

Basis	Value	Units	Reference
Road Surface Silt Loading (sL)	8.2	g/m^2	EPD specifications
Mean Vehicle Weight (W)	12.5	tons	Average Weight of vehicles
k (empircal constant) - PM_{10}	0.016	lb/VMT	AP-42 constant for paved road
k (empircal constant) - $PM_{2.5}$	0.0024	lb/VMT	AP-42 constant for paved road
Number of wet days in a year (P)	120	days/year	AP-42 table (number of days in a year with at least 0.01 inch of precipitation)
Total Miles traveled on a road segment	34,943 miles/year		Based on Segment Distance and Number of Trips
Control Efficiency	90	%	Projected Control Efficiency
Number of Days in Averaging Period	365	days	Number of Days in Averaging Period

PM_{10} Emission Factor (E)

$$k * \left(\frac{sL}{2}\right)^{0.65} * \left(\frac{W}{3}\right)^{1.5}$$

$$0.016 * \left(\frac{8.2}{2}\right)^{0.65} * \left(\frac{12.5}{3}\right)^{1.5} = 0.34 \text{ lb/VMT}$$

PM_{10} Emissions

$$0.34 \text{ lb/VMT} * 34{,}943 \text{ miles/year} * \frac{1 \text{ ton}}{2000 \text{ lb}} * (1-120/(4*365)) * \frac{(100\%-90\%)}{100\%} = 0.55 \text{ ton/yr}$$

$PM_{2.5}$ Emission Factor (E)

$$k * \left(\frac{sL}{2}\right)^{0.65} * \left(\frac{W}{3}\right)^{1.5}$$

$$0.0024 * \left(\frac{8.2}{2}\right)^{0.65} * \left(\frac{12.5}{3}\right)^{1.5} = 0.05 \text{ lb/VMT}$$

$PM_{2.5}$ Emissions

$$0.05 \text{ lb/VMT} * 34{,}943 \text{ miles/year} * \frac{1 \text{ ton}}{2000 \text{ lb}} * (1-120/(4*365)) * \frac{(100\%-90\%)}{100\%} = 8.19 \text{ E-02 ton/yr}$$

15 Fugitive Emission Calculations for Unpaved Road - Source U1-U15

Basis	Value	Units	Reference
Mean Vehicle Weight (W)	50	tons	Average Weight of vehicles, Project Specification
Surface Material Silt Content (s)	6	%	AP-42, Table 11.9-3 Bulldozers (Coal)
k (empirical constant) - TSP	4.9	lb/VMT	AP-42 constant for unpaved road
k (empirical constant) - PM_{10}	1.5	lb/VMT	AP-42 constant for unpaved road
k (empirical constant) - $PM_{2.5}$	0.15	lb/VMT	AP-42 constant for unpaved road
a (empirical constant) - TSP	0.7		AP-42 constant for unpaved road
a (empirical constant) - PM_{10}	0.9		AP-42 constant for unpaved road
a (empirical constant) - $PM_{2.5}$	0.9		AP-42 constant for unpaved road
b (empirical constant) - TSP	0.45		AP-42 constant for unpaved road
b (empirical constant) - PM_{10}	0.45		AP-42 constant for unpaved road
b (empirical constant) - $PM_{2.5}$	0.45		AP-42 constant for unpaved road
Number of wet days in a year (P)	120	days/year	AP-42 table (number of days in a year with at least 0.01 inch of precipitation)
Total Miles traveled on a road segment	730 miles/year		Project Specification
Control Efficiency	50	%	Projected Control Efficiency
Number of Days in Averaging Period	120	days	Number of Days in Averaging Period

TSP Emission Factor (E)

$$E = k * \left(\frac{s}{12}\right)^{a} * \left(\frac{W}{3}\right)^{b} * (1-f) * \frac{(365-P)}{365}$$

$$4.9 * \left(\frac{6}{12}\right)^{0.7} * \left(\frac{50}{3}\right)^{0.45} * 0.5 * \frac{245}{365} = 3.59 \text{ lb/VMT}$$

TSP Emissions

$$3.59 \text{ lb/VMT} * 730 \text{ miles/year} * \frac{1 \text{ ton}}{2000 \text{ lb}} = \boxed{1.31 \text{ ton/yr}}$$

PM_{10} Emission Factor (E)

$$E = k * \left(\frac{s}{12}\right)^{a} * \left(\frac{W}{3}\right)^{b} * (1-f) * \frac{(365-P)}{365}$$

$$1.5 * \left(\frac{6}{12}\right)^{0.9} * \left(\frac{50}{3}\right)^{0.45} * 0.5 * \frac{245}{365} = 0.96 \text{ lb/VMT}$$

PM_{10} Emissions

$$0.96 \text{ lb/VMT} * 730 \text{ miles/year} * \frac{1 \text{ ton}}{2000 \text{ lb}} = \boxed{0.35 \text{ ton/yr}}$$

$PM_{2.5}$ Emission Factor (E)

$$E = k * \left(\frac{s}{12}\right)^{a} * \left(\frac{W}{3}\right)^{b} * (1-f) * \frac{(365-P)}{365}$$

$$0.15 * \left(\frac{6}{12}\right)^{0.9} * \left(\frac{50}{3}\right)^{0.45} * 0.5 * \frac{245}{365} = 9.57\text{E-}02 \text{ lb/VMT}$$

$PM_{2.5}$ Emissions

$$9.57\text{E-}02 \text{ lb/VMT} * 730 \text{ miles/year} * \frac{1 \text{ ton}}{2000 \text{ lb}} = \boxed{3.49\text{E-}2 \text{ ton/yr}}$$

Completed by: BSA 11/26/2008
Checked by: SAK 11/26/2008

CASE-BY-CASE MACT CALCULATIONS

Table A-3: USGS COALQUAL Summary Data for PRB and Illinois No. 6

Elements	PRB Coal Average	Standard Deviation	90% Confidence Level PRB	Illinois #6 Coal Average	Standard Deviation	90% Confidence Level Illinois #6 Coal	PRB-Illinois # 6 Coal 50-50 Blend Average	90% Confidence Level 50-50 Blend
Antimony (Sb) Emission Factor	0.67 ppm	0.90 ppm	1.82 ppm	0.89 ppm	0.97 ppm	2.14 ppm	0.78 ppm	1.98 ppm
Arsenic (As) Emission Factor	7.10 ppm	25.82 ppm	40.15 ppm	7.50 ppm	10.47 ppm	20.90 ppm	7.30 ppm	30.52 ppm
Beryllium (Be) Emission Factor	0.95 ppm	1.01 ppm	2.24 ppm	2.59 ppm	2.26 ppm	5.49 ppm	1.77 ppm	3.87 ppm
Cadmium (Cd) Emission Factor	0.14 ppm	0.19 ppm	0.38 ppm	3.41 ppm	8.40 ppm	14.16 ppm	1.77 ppm	7.27 ppm
Chlorine (Cl) Emission Factor	97.52 ppm	97.62 ppm	222.48 ppm	2700 ppm	---	4000 ppm	1398.76 ppm	2111.24 ppm
Chromium (Cr) Emission Factor	7.19 ppm	7.16 ppm	16.35 ppm	16.63 ppm	7.47 ppm	26.19 ppm	11.91 ppm	21.27 ppm
Cobalt (Co) Emission Factor	2.17 ppm	2.36 ppm	5.18 ppm	3.45 ppm	1.39 ppm	5.23 ppm	2.81 ppm	5.21 ppm
Fluorine (F) Emission Factor	76.76 ppm	81.51 ppm	181.09 ppm	80.38 ppm	33.95 ppm	123.83 ppm	78.57 ppm	152.46 ppm
Manganese (Mn) Emission Fact	47.80 ppm	56.45 ppm	120.05 ppm	56.75 ppm	32.74 ppm	98.66 ppm	52.27 ppm	109.36 ppm
Mercury (Hg) Emission Factor	0.10 ppm	0.11 ppm	0.25 ppm	0.09 ppm	0.05 ppm	0.15 ppm	0.10 ppm	0.20 ppm
Nickel (Ni) Emission Factor	6.04 ppm	7.43 ppm	15.56 ppm	15.65 ppm	10.53 ppm	29.12 ppm	10.85 ppm	22.34 ppm
Lead (Pb) Emission Factor	4.63 ppm	4.79 ppm	10.77 ppm	10.76 ppm	11.37 ppm	25.31 ppm	7.70 ppm	18.04 ppm
Selenium (Se) Emission Factor	1.09 ppm	0.94 ppm	2.30 ppm	2.28 ppm	1.10 ppm	3.69 ppm	1.68 ppm	2.99 ppm

Note: Fluorine and Chlorine ppm values used to determine uncontrolled emissions of HF and HCl. Raw coal quality analysis data can be found in Exhibit A. Chlorine concentration values indicated for Illinois #6 coals based on coal design basis data and not USGS COALQUAL data.

Completed by: BSA 11/26/2008
Checked by: SAK 11/26/2008

Table A-4 : Moisture Data Correction

Coal	Total Moisture (%)	Average Ratio of Residual Moisture to Total Moisture[1]	Residual Moisture (%)[2]	Moisture Correction[3]
PRB	29.61	0.3957	11.72	0.7973
Illinois # 6	10	0.6546	6.55	0.9630
50-50 Blend	19.81		9.13	0.8825

1. Value derived from USGS COALQUAL Data as described in Section 10.
2. Residual moisture (%) of project coal is moisture (%) * average ratio of Residual moisture to Total moisture.
3. Moisture correction is (100 - Total Moisture)/ (100 - Residual moisture).

Completed by: JDF 11/26/2008
Checked by: SAK 11/26/2008

16 **PRB Coal Case-By-Case MACT 90% Confidence Level Emission Rate Calculations - Main Boiler (Stack S1)**

Basis	Value	Units	
Exhaust Flow Rate	1,927,690	dscf/min	Project Specification
Maximum Heat Input - Full Load	8300	MMBtu/hr	Project Specification
Antimony (Sb) Emission Factor	1.82	ppm	90% Confidence level from Coal Analysis Data
Arsenic (As) Emission Factor	40.15	ppm	90% Confidence level from Coal Analysis Data
Beryllium (Be) Emission Factor	2.24	ppm	90% Confidence level from Coal Analysis Data
Cadmium (Cd) Emission Factor	0.38	ppm	90% Confidence level from Coal Analysis Data
Chromium (Cr) Emission Factor	16.35	ppm	90% Confidence level from Coal Analysis Data
Cobalt (Co) Emission Factor	5.18	ppm	90% Confidence level from Coal Analysis Data
Manganese (Mn) Emission Factor	120.05	ppm	90% Confidence level from Coal Analysis Data
Nickel (Ni) Emission Factor	15.56	ppm	90% Confidence level from Coal Analysis Data
Lead (Pb) Emission Factor	10.77	ppm	90% Confidence level from Coal Analysis Data
Selenium (Se) Emission Factor	2.30	ppm	90% Confidence level from Coal Analysis Data
Fluorine Fuel Content	0.018109094	lb F per 100 lb coal	Project Specification
Chlorine Fuel Content	0.02224787	lb Cl per 100 lb coal	Project Specification
MACT Floor Metals Control Efficiency	99	%	
MACT Floor Acid Gas (HCl, HF) Control Efficiency	98.5	%	
Moisture Correction Factor	0.7973		From Table A-4
Coal Heating Value	8500	Btu/lb	
lb HCl per lb Cl	1.03	lb	
lb HF per lb F	1.05	lb	
kg per ton	907.18	kg/ton	
mg per lb	453592.37	mg/lb	
Coal Flow Rate For PRB	488	ton/hr	

Antimony (Sb) Emissions

Estimated Uncontrolled Emissions

$$\frac{1.82\ \text{mg}}{\text{kg}} * \frac{907.18\ \text{kg}}{\text{ton}} * \frac{1\ \text{lb}}{453592.37\ \text{mg}} * \frac{488\ \text{ton}}{\text{hr}} * 0.7973 * \frac{1\ \text{hr}}{8300\ \text{MMBtu}} = \boxed{\textbf{1.71E-04 lb/MMBtu}}$$

Estimated Controlled Emissions

1.71E-04 lb/MMBtu * 99 % Removal = **1.71E-06 lb/MMBtu**

Arsenic (As) Emissions

Estimated Uncontrolled Emissions

$$\frac{40.15\ \text{mg}}{\text{kg}} * \frac{907.18\ \text{kg}}{\text{ton}} * \frac{1\ \text{lb}}{453592.37\ \text{mg}} * \frac{488\ \text{ton}}{\text{hr}} * 0.7973 * \frac{1\ \text{hr}}{8300\ \text{MMBtu}} = \boxed{\textbf{3.77E-03 lb/MMBtu}}$$

Estimated Controlled Emissions

3.77E-03 lb/MMBtu * 99 % Removal = **3.77E-05 lb/MMBtu**

Completed by : BSA 11/26/2008
Checked by: SAK 11/26/2008

Beryllium (Be) Emissions

Estimated Uncontrolled Emissions

$$\frac{2.24\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{488\ ton}{hr} * 0.7973 * \frac{1\ hr}{8300\ MMBtu} = \mathbf{2.11E\text{-}04\ lb/MMBtu}$$

Estimated Controlled Emissions

2.11E-04 lb/MMBtu * 99 % Removal = **2.11E-06 lb/MMBtu**

Cadmium (Cd) Emissions

Estimated Uncontrolled Emissions

$$\frac{0.38\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{488\ ton}{hr} * 0.7973 * \frac{1\ hr}{8300\ MMBtu} = \mathbf{3.53E\text{-}05\ lb/MMBtu}$$

Estimated Controlled Emissions

3.53E-05 lb/MMBtu * 99 % Removal = **3.53E-07 lb/MMBtu**

Chromium (Cr) Emissions

Estimated Uncontrolled Emissions

$$\frac{16.35\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{488\ ton}{hr} * 0.7973 * \frac{1\ hr}{8300\ MMBtu} = \mathbf{1.53E\text{-}03\ lb/MMBtu}$$

Estimated Controlled Emissions

1.53E-03 lb/MMBtu * 99 % Removal = **1.53E-05 lb/MMBtu**

Cobalt (Co) Emissions

Estimated Uncontrolled Emissions

$$\frac{5.18\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{488\ ton}{hr} * 0.7973 * \frac{1\ hr}{8300\ MMBtu} = \mathbf{4.86E\text{-}04\ lb/MMBtu}$$

Estimated Controlled Emissions

4.86E-04 lb/MMBtu * 99 % Removal = **4.86E-06 lb/MMBtu**

Manganese (Mn) Emissions

Estimated Uncontrolled Emissions

$$\frac{120.05\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{488\ ton}{hr} * 0.7973 * \frac{1\ hr}{8300\ MMBtu} = \mathbf{1.13E\text{-}02\ lb/MMBtu}$$

Completed by : BSA 11/26/2008
Checked by: SAK 11/26/2008

Estimated Controlled Emissions

1.13E-02 lb/MMBtu * 99 % Removal = **1.13E-04 lb/MMBtu**

Nickel (Ni) Emissions

Estimated Uncontrolled Emissions

$$\frac{15.56\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{488\ ton}{hr} * 0.7973 * \frac{1\ hr}{8300\ MMBtu} = \mathbf{1.46E\text{-}03\ lb/MMBtu}$$

Estimated Controlled Emissions

1.46E-03 lb/MMBtu * 99 % Removal = **1.46E-05 lb/MMBtu**

Lead (Pb) Emissions

Estimated Uncontrolled Emissions

$$\frac{10.77\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{488\ ton}{hr} * 0.7973 * \frac{1\ hr}{8300\ MMBtu} = \mathbf{1.01E\text{-}03\ lb/MMBtu}$$

Estimated Controlled Emissions

1.01E-03 lb/MMBtu * 99 % Removal = **1.01E-05 lb/MMBtu**

Selenium (Se) Emissions

Estimated Uncontrolled Emissions

$$\frac{2.30\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{488\ ton}{hr} * 0.7973 * \frac{1\ hr}{8300\ MMBtu} = \mathbf{2.15E\text{-}04\ lb/MMBtu}$$

Estimated Controlled Emissions

2.15E-04 lb/MMBtu * 99 % Removal = **2.15E-06 lb/MMBtu**

Hydrogen Chloride (HCl) Emissions

Estimated Uncontrolled Emissions

$$\frac{0.02\ lb\ Cl}{100\ lb\ coal} * \frac{1\ lb}{8500\ Btu} * \frac{1 \times 10^{6}\ Btu}{MMBtu} * \frac{1.03\ lb\ HCl}{lb\ Cl} * 0.7973 = \mathbf{2.15E\text{-}02\ lb/MMBtu}$$

Estimated Controlled Emissions

2.15E-02 lb/MMBtu * 98.5 % Removal = **3.22E-04 lb/MMBtu**

Completed by : BSA 11/26/2008
Checked by: SAK 11/26/2008

Hydrogen Fluoride (HF) Emissions

Estimated Uncontrolled Emissions

$$\frac{0.0181 \text{ lb F}}{100 \text{ lb coal}} * \frac{1 \text{ lb}}{8500 \text{ Btu}} * \frac{1 \times 10^6 \text{ Btu}}{\text{MMBtu}} * \frac{1.05 \text{ lb HF}}{\text{lb F}} * 0.7973 = \boxed{\textbf{1.78E-02 lb/MMBtu}}$$

Estimated Controlled Emissions

1.78E-02 lb/MMBtu * 98.5 % Removal = **2.68E-04 lb/MMBtu**

Completed by : BSA 11/26/2008
Checked by: SAK 11/26/2008

17 PRB Coal 95% UCL Mercury Calculations - Main Boiler (Stack S1)

Basis	Value	Units	
Exhaust Flow Rate	1,927,690	dscf/min	Project Specification
Maximum Heat Input - Full Load	8300	MMBtu/hr	Project Specification
Mercury (Hg) Emission Factor (PRB Coal Avg.)	0.11	ppm	95% UCL from Coal Analysis Data
MACT Floor Mercury Control Efficiency	83.6	%	
Moisture Correction Factor	0.7973		From Table A-4
Coal Heating Value	8500	Btu/lb	From Coal Analysis Data
kg per ton	907.18	kg/ton	
mg per lb	453592.37	mg/lb	
Coal Flow Rate For PRB	488	ton/hr	
Plant Gross Output Capacity	930	MW	

Mercury (Hg) Emissions (PRB Coal Avg.)

Estimated Uncontrolled Emissions

$$\frac{0.11\ \text{mg}}{\text{kg}} * \frac{907.18\ \text{kg}}{\text{ton}} * \frac{1\ \text{lb}}{453592.37\ \text{mg}} * \frac{488\ \text{ton}}{\text{hr}} * 0.7973 * \frac{1\ \text{hr}}{8300\ \text{MMBtu}} = \boxed{\textbf{1.02E-05 lb/MMBtu}}$$

Estimated Controlled Emissions

1.02E-05 lb/MMBtu * 84 % Removal = **1.68E-06 lb/MMBtu**

1.68E-06 lb/MMBtu * 8300 MMBtu/hr ÷ 930 MW = **1.50E-05 lb/MW-hr**

Completed by : BSA11/26/2008
Checked by : SAK 11/26/2008

18 50-50 Blend of PRB Coals and Illinois No. 6 Coals 90% Confidence Level Emission Rate Calculations - Main Boiler (Stack S1)

Basis	Value	Units	
Exhaust Flow Rate	1,927,690	dscf/min	Project Specification
Maximum Heat Input - Full Load	8300	MMBtu/hr	Project Specification
Antimony (Sb) Emission Factor	1.98	ppm	90% Confidence level from Coal Analysis Data
Arsenic (As) Emission Factor	30.52	ppm	90% Confidence level from Coal Analysis Data
Beryllium (Be) Emission Factor	3.87	ppm	90% Confidence level from Coal Analysis Data
Cadmium (Cd) Emission Factor	7.27	ppm	90% Confidence level from Coal Analysis Data
Chromium (Cr) Emission Factor	21.27	ppm	90% Confidence level from Coal Analysis Data
Cobalt (Co) Emission Factor	5.21	ppm	90% Confidence level from Coal Analysis Data
Manganese (Mn) Emission Factor	109.36	ppm	90% Confidence level from Coal Analysis Data
Nickel (Ni) Emission Factor	22.34	ppm	90% Confidence level from Coal Analysis Data
Lead (Pb) Emission Factor	18.04	ppm	90% Confidence level from Coal Analysis Data
Selenium (Se) Emission Factor	2.99	ppm	90% Confidence level from Coal Analysis Data
Fluorine Fuel Content	0.015246016	lb F per 100 lb coal	Project Specification
Chlorine Fuel Content	0.211123935	lb Cl per 100 lb coal	Project Specification
MACT Floor Metals Control Efficiency	99	%	
MACT Floor Acid Gas (HCl, HF) Control Efficien	98.5	%	
Moisture Correction Factor	0.8825		From Table A-4
Coal Heating Value	9950	Btu/lb	
lb HCl per lb Cl	1.03	lb	
lb HF per lb F	1.05	lb	
kg per ton	907.18	kg/ton	
mg per lb	453592.37	mg/lb	
Coal Flow Rate For 50/50 Blend	417	ton/hr	

Antimony (Sb) Emissions

Estimated Uncontrolled Emissions

$$\frac{1.98\ \text{mg}}{\text{kg}} * \frac{907.18\ \text{kg}}{\text{ton}} * \frac{1\ \text{lb}}{453592.37\ \text{mg}} * \frac{417\ \text{ton}}{\text{hr}} * \frac{1\ \text{hr}}{8300\ \text{MMBtu}} * 0.8825 = \boxed{\textbf{1.75E-04 lb/MMBtu}}$$

Estimated Controlled Emissions

1.75E-04 lb/MMBtu * 99 % Removal = **1.75E-06 lb/MMBtu**

Arsenic (As) Emissions

Estimated Uncontrolled Emissions

$$\frac{30.52\ \text{mg}}{\text{kg}} * \frac{907.18\ \text{kg}}{\text{ton}} * \frac{1\ \text{lb}}{453592.37\ \text{mg}} * \frac{417\ \text{ton}}{\text{hr}} * \frac{1\ \text{hr}}{8300\ \text{MMBtu}} * 0.8825 = \boxed{\textbf{2.71E-03 lb/MMBtu}}$$

Estimated Controlled Emissions

2.71E-03 lb/MMBtu * 99 % Removal = **2.71E-05 lb/MMBtu**

Beryllium (Be) Emissions

Estimated Uncontrolled Emissions

$$\frac{3.87\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{417\ ton}{hr} * \frac{1\ hr}{8300\ MMBtu} * 0.8825 = \boxed{\textbf{3.43E-04 lb/MMBtu}}$$

Estimated Controlled Emissions

3.43E-04 lb/MMBtu * 99 % Removal = **3.43E-06 lb/MMBtu**

Cadmium (Cd) Emissions

Estimated Uncontrolled Emissions

$$\frac{7.27\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{417\ ton}{hr} * \frac{1\ hr}{8300\ MMBtu} * 0.8825 = \boxed{\textbf{6.45E-04 lb/MMBtu}}$$

Estimated Controlled Emissions

6.45E-04 lb/MMBtu * 99 % Removal = **6.45E-06 lb/MMBtu**

Chromium (Cr) Emissions

Estimated Uncontrolled Emissions

$$\frac{21.27\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{417\ ton}{hr} * \frac{1\ hr}{8300\ MMBtu} * 0.8825 = \boxed{\textbf{1.89E-03 lb/MMBtu}}$$

Estimated Controlled Emissions

1.89E-03 lb/MMBtu * 99 % Removal = **1.89E-05 lb/MMBtu**

Cobalt (Co) Emissions

Estimated Uncontrolled Emissions

$$\frac{5.21\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{417\ ton}{hr} * \frac{1\ hr}{8300\ MMBtu} * (100\% - 88.25\%) = \boxed{\textbf{4.62E-04 lb/MMBtu}}$$

Estimated Controlled Emissions

4.62E-04 lb/MMBtu * 99 % Removal = **4.62E-06 lb/MMBtu**

Manganese (Mn) Emissions

Estimated Uncontrolled Emissions

$$\frac{109.36\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{417\ ton}{hr} * \frac{1\ hr}{8300\ MMBtu} * 0.8825 = \boxed{\textbf{9.70E-03 lb/MMBtu}}$$

Estimated Controlled Emissions

9.70E-03 lb/MMBtu * 99 % Removal = **9.70E-05 lb/MMBtu**

Nickel (Ni) Emissions

Estimated Uncontrolled Emissions

$$\frac{22.34\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{417\ ton}{hr} * \frac{1\ hr}{8300\ MMBtu} * 0.8825 = \textbf{1.98E-03 lb/MMBtu}$$

Estimated Controlled Emissions

1.98E-03 lb/MMBtu * 99 % Removal = **1.98E-05 lb/MMBtu**

Lead (Pb) Emissions

Estimated Uncontrolled Emissions

$$\frac{18.04\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{417\ ton}{hr} * \frac{1\ hr}{8300\ MMBtu} * 0.8825 = \textbf{1.60E-03 lb/MMBtu}$$

Estimated Controlled Emissions

1.60E-03 lb/MMBtu * 99 % Removal = **1.60E-05 lb/MMBtu**

Selenium (Se) Emissions

Estimated Uncontrolled Emissions

$$\frac{2.99\ mg}{kg} * \frac{907.18\ kg}{ton} * \frac{1\ lb}{453592.37\ mg} * \frac{417\ ton}{hr} * \frac{1\ hr}{8300\ MMBtu} * 0.8825 = \textbf{2.65E-04 lb/MMBtu}$$

Estimated Controlled Emissions

2.65E-04 lb/MMBtu * 99 % Removal = **2.65E-06 lb/MMBtu**

Hydrogen Chloride (HCl) Emissions

Estimated Uncontrolled Emissions

$$\frac{0.21\ lb\ Cl}{100\ lb\ coal} * \frac{1\ lb}{9950\ Btu} * \frac{1 \times 10^{6}\ Btu}{MMBtu} * \frac{1.03\ lb\ HCl}{lb\ Cl} * 0.8825 = \textbf{1.93E-01 lb/MMBtu}$$

Estimated Controlled Emissions

1.93E-01 lb/MMBtu * 98.5 % Removal = **2.89E-03 lb/MMBtu**

Hydrogen Fluoride (HF) Emissions

Estimated Uncontrolled Emissions

$$\frac{0.0152 \text{ lb F}}{100 \text{ lb coal}} * \frac{1 \text{ lb}}{9950 \text{ Btu}} * \frac{1 \times 10^6 \text{ Btu}}{\text{MMBtu}} * \frac{1.05 \text{ lb HF}}{\text{lb F}} * 0.8825 = \boxed{\textbf{1.42E-02 lb/MMBtu}}$$

Estimated Controlled Emissions

1.42E-02 lb/MMBtu * 98.5 % Removal = **2.13E-04 lb/MMBtu**

Table A-5: Organic HAP (and Others) Emission Calculations: Main Boiler - 100% PRB Coal

Basis:
Coal Consumption Rate 488 ton Coal/hr
Fuel Oil Consumption Rate 9286 gal/hr
Maximum heat Input 8.30E-03 Trillion Btu/hr

Compound	Pulverized Coal [1] - AP42			Fuel Oil [2] - AP42			Pulverized Coal [3] - Utility Report to Congress, NEI Database, TRI Database			Worst Case Emissions (lb/hr)	Worst Case Emissions (tpy)
	Emission Factor	Units	Hourly Emissions (lb/hr)	Emission Factor	Units	Hourly Emissions (lb/hr)	Emission Factor	Units	Hourly Emissions (lb/hr)		
Organics											
Acenaphthene	5.10E-07	lb/ton	2.49E-04	2.1E-05	lb/1,000 gal	2.0E-04	0.013	lb/trillion btu	1.08E-04	2.5E-04	1.1E-03
Acenaphthylene	2.50E-07	lb/ton	1.22E-04	2.5E-07	lb/1,000 gal	2.3E-06	0.004	lb/trillion btu	3.32E-05	1.2E-04	5.3E-04
Acetaldehyde	5.70E-04	lb/ton	2.78E-01				6.75	lb/trillion btu	5.60E-02	2.8E-01	1.2E+00
Acetophenone	1.50E-05	lb/ton	7.32E-03				0.68	lb/trillion btu	5.64E-03	7.3E-03	3.2E-02
Acrolein	2.90E-04	lb/ton	1.42E-01				3.25	lb/trillion btu	2.70E-02	1.4E-01	6.2E-01
Anthracene	2.10E-07	lb/ton	1.02E-04	1.2E-06	lb/1,000 gal	1.1E-05	0.004	lb/trillion btu	3.32E-05	1.0E-04	4.5E-04
Benzene	1.30E-03	lb/ton	6.34E-01	2.14E-04	lb/1,000 gal	2.0E-03	2.5	lb/trillion btu	2.08E-02	6.3E-01	2.8E+00
Benzo(a)anthracene	8.00E-08	lb/ton	3.90E-05	4.0E-06	lb/1,000 gal	3.7E-05	0.002	lb/trillion btu	1.66E-05	3.9E-05	1.7E-04
Benzo(a)pyrene	3.80E-08	lb/ton	1.85E-05				0.001	lb/trillion btu	8.30E-06	1.9E-05	8.1E-05
Benzo(b)fluoranthene			-				0.008	lb/trillion btu	6.64E-05	6.6E-05	2.9E-04
Benzo(e)pyrene			-				0.001	lb/trillion btu	8.30E-06	8.3E-06	3.6E-05
Benzo(g,h,i)perylene			-	2.26E-06	lb/1,000 gal	2.1E-05	0.002	lb/trillion btu	1.66E-05	2.1E-05	9.2E-05
Benzo(g,h,i)pyrene	2.70E-08	lb/ton	1.32E-05							1.3E-05	5.8E-05
Benzo(b,k)fluoranthene	1.10E-07	lb/ton	5.37E-05	1.48E-06	lb/1,000 gal	1.4E-05	0.004	lb/trillion btu	3.32E-05	5.4E-05	2.4E-04
Benzo(k)fluoranthene			-				0.004	lb/trillion btu	3.32E-05	3.3E-05	1.5E-04
Benzyl chloride	7.00E-04	lb/ton	3.42E-01				0.006	lb/trillion btu	4.98E-05	3.4E-01	1.5E+00
Biphenyl	1.70E-06	lb/ton	8.30E-04				0.18	lb/trillion btu	1.49E-03	1.5E-03	6.5E-03
bis(2-Ethylhexyl)phthalate	7.30E-05	lb/ton	3.56E-02				4.1	lb/trillion btu	3.40E-02	3.6E-02	1.6E-01
Bromoform	3.90E-05	lb/ton	1.90E-02				6.6	lb/trillion btu	5.48E-02	5.5E-02	2.4E-01
Carbon tetrachloride			-				3.25	lb/trillion btu	2.70E-02	2.7E-02	1.2E-01
Carbon disulfide	1.30E-04	lb/ton	6.34E-02				4.3	lb/trillion btu	3.57E-02	6.3E-02	2.8E-01
Chlorobenzene	2.20E-05	lb/ton	1.07E-02				3.18	lb/trillion btu	2.64E-02	2.6E-02	1.2E-01
Chloroform	5.90E-05	lb/ton	2.88E-02				3.2	lb/trillion btu	2.66E-02	2.9E-02	1.3E-01
Chloromethane	5.30E-04	lb/ton	2.59E-01				5.9	lb/trillion btu	4.90E-02	2.6E-01	1.1E+00
2-Chloronaphthalene			-				0.04	lb/trillion btu	3.32E-04	3.3E-04	1.5E-03
2-Chloroacetophenone	7.00E-06	lb/ton	3.42E-03				0.29	lb/trillion btu	2.41E-03	3.4E-03	1.5E-02
Chrysene	1.00E-07	lb/ton	4.88E-05	2.4E-06	lb/1,000 gal	2.2E-05	0.003	lb/trillion btu	2.49E-05	4.9E-05	2.1E-04
Cumene	5.30E-06	lb/ton	2.59E-03				0.29	lb/trillion btu	2.41E-03	2.6E-03	1.1E-02
Hydrogen Cyanide	2.50E-03	lb/ton	1.22E+00				28.00	lb/trillion btu	2.32E-01	1.2E+00	5.3E+00
Dibenzo(a,h)anthracene			-	1.7E-06	lb/1,000 gal	1.6E-05	0.001	lb/trillion btu	8.30E-06	1.6E-05	6.8E-05
Dibutyl phthalate							2.8	lb/trillion btu	2.32E-02	2.3E-02	1.0E-01
Dimethyl sulfate	4.80E-05	lb/ton	2.34E-02							2.3E-02	1.0E-01
2,4-Dinitrotoluene	2.80E-07	lb/ton	1.37E-04				0.015	lb/trillion btu	1.25E-04	1.4E-04	6.0E-04
Ethylbenzene	9.40E-05	lb/ton	4.59E-02	6.36E-05	lb/1,000 gal	5.9E-04	0.41	lb/trillion btu	3.40E-03	4.6E-02	2.0E-01
Ethyl Chloride	4.20E-05	lb/ton	2.05E-02				2.4	lb/trillion btu	1.99E-02	2.0E-02	9.0E-02
Ethylene dichloride	4.00E-05	lb/ton	1.95E-02				3.1	lb/trillion btu	2.57E-02	2.6E-02	1.1E-01
Ethylene dibromide	1.20E-06	lb/ton	5.86E-04							5.9E-04	2.6E-03
Fluoranthene	7.10E-07	lb/ton	3.46E-04	4.8E-06	lb/1,000 gal	4.5E-05	0.016	lb/trillion btu	1.33E-04	3.5E-04	1.5E-03
Fluorene	9.10E-07	lb/ton	4.44E-04	4.5E-06	lb/1,000 gal	4.2E-05	0.013	lb/trillion btu	1.08E-04	4.4E-04	1.9E-03
Formaldehyde	2.40E-04	lb/ton	1.17E-01	3.3E-02	lb/1,000 gal	3.1E-01	4.0	lb/trillion btu	3.32E-02	3.1E-01	1.3E+00
Hexane	6.70E-05	lb/ton	3.27E-02				0.83	lb/trillion btu	6.89E-03	3.3E-02	1.4E-01
Indeno(1,2,3,c,d)pyrene	6.10E-08	lb/ton	2.98E-05	2.1E-06	lb/1,000 gal	2.0E-05	0.003	lb/trillion btu	2.49E-05	3.0E-05	1.3E-04
Isophorone	5.80E-04	lb/ton	2.83E-01				24	lb/trillion btu	1.99E-01	2.8E-01	1.2E+00
Methyl Bromide	1.60E-04	lb/ton	7.81E-02				0.89	lb/trillion btu	7.39E-03	7.8E-02	3.4E-01
Methyl hydrazine	1.70E-04	lb/ton	8.30E-02							8.3E-02	3.6E-01
MMA	2.00E-03	lb/ton	9.76E-03				1.1	lb/trillion btu	9.13E-03	9.8E-03	4.3E-02
2-Methylnaphthalene			-				0.032	lb/trillion btu	2.66E-04	2.7E-04	1.2E-03
MTBE	3.50E-05	lb/ton	1.71E-02				1.4	lb/trillion btu	1.16E-02	1.7E-02	7.5E-02
Methylene chloride	2.90E-04	lb/ton	1.42E-01				13	lb/trillion btu	1.08E-01	1.4E-01	6.2E-01
Naphthalene	1.30E-05	lb/ton	6.34E-03	1.13E-03	lb/1,000 gal	1.0E-02	0.77	lb/trillion btu	6.39E-03	1.0E-02	4.6E-02
5-Methyl chrysene	2.20E-08	lb/ton	1.07E-05							1.1E-05	4.7E-05
OCDD				3.10E-09	lb/1,000 gal	2.9E-08				2.9E-08	1.3E-07
Phenanthrene	2.70E-06	lb/ton	1.32E-03	1.1E-05	lb/1,000 gal	9.8E-05	0.032	lb/trillion btu	2.66E-04	1.3E-03	5.8E-03
Phenol	1.60E-05	lb/ton	7.81E-03				6.1	lb/trillion btu	5.06E-02	5.1E-02	2.2E-01
Propionaldehyde	3.80E-04	lb/ton	1.85E-01				10.35	lb/trillion btu	8.59E-02	1.9E-01	8.1E-01
Pyrene	3.30E-07	lb/ton	1.61E-04	4.3E-06	lb/1,000 gal	3.9E-05	0.012	lb/trillion btu	9.96E-05	1.6E-04	7.1E-04
Styrene	2.50E-05	lb/ton	1.22E-02				3.1	lb/trillion btu	2.57E-02	2.6E-02	1.1E-01
Tetrachloroethylene	4.30E-05	lb/ton	2.10E-02				3.1	lb/trillion btu	2.57E-02	2.6E-02	1.1E-01
Toluene	2.40E-04	lb/ton	1.17E-01	6.20E-03	lb/1,000 gal	5.8E-02	3.6	lb/trillion btu	2.99E-02	1.2E-01	5.1E-01
1,1,1-Trichloroethane	2.00E-05	lb/ton	9.76E-03	2.36E-04	lb/1,000 gal	2.2E-03				9.8E-03	4.3E-02
1,1,2-Trichloroethane			-				4.7	lb/trillion btu	3.90E-02	3.9E-02	1.7E-01
Trichloroethylene			-				3.1	lb/trillion btu	2.57E-02	2.6E-02	1.1E-01
Vinyl acetate	7.60E-06	lb/ton	3.71E-03				0.42	lb/trillion btu	3.49E-03	3.7E-03	1.6E-02
Xylene	3.70E-05	lb/ton	1.81E-02	1.09E-04	lb/1,000 gal	1.0E-03	4.65	lb/trillion btu	3.86E-02	3.9E-02	1.7E-01
m-xylene			-				1.45	lb/trillion btu	1.20E-02	1.2E-02	5.3E-02
o-xylene							0.81	lb/trillion btu	6.72E-03	6.7E-03	2.9E-02
p-xylene							1.45	lb/trillion btu	1.20E-02	1.2E-02	5.3E-02
Dioxins (Total)							9.68E-06	lb/trillion btu	8.03E-08	8.0E-08	3.5E-07
P-Cresol							0.95	lb/trillion btu	7.89E-03	7.9E-03	3.5E-02
perylene							0.075	lb/trillion btu	6.23E-04	6.2E-04	2.7E-03
Pentachlorophenol							0.008	lb/trillion btu	6.64E-05	6.6E-05	2.9E-04
Hexachlorobenzene							0.08	lb/trillion btu	6.64E-04	6.6E-04	2.9E-03
Methyl chloroform							3.42	lb/trillion btu	2.84E-02	2.8E-02	1.2E-01
Methyl iodine							0.4	lb/trillion btu	3.32E-03	3.3E-03	1.5E-02
Methyl isobutyl ketone							4.9	lb/trillion btu	4.07E-02	4.1E-02	1.8E-01
1,2,4-Trichlorobenzene	-	-	-	-	-	-	1.51E-06	lb/MMBtu	1.25E-02	1.3E-02	5.5E-02
1,3-Butadiene	-	-	-	-	-	-	3.71E-07	lb/MMBtu	3.08E-03	3.1E-03	1.3E-02
1,3-Dichloropropene	-	-	-	-	-	-	6.61E-07	lb/MMBtu	5.48E-03	5.5E-03	2.4E-02
1,4-Dichlorobenzene	-	-	-	-	-	-	1.06E-06	lb/MMBtu	8.76E-03	8.8E-03	3.8E-02
2,4,6-Trichlorophenol	-	-	-	-	-	-	8.01E-10	lb/MMBtu	6.64E-06	6.6E-06	2.9E-05
2,4-Dinitrophenol	-	-	-	-	-	-	1.08E-08	lb/MMBtu	8.92E-05	8.9E-05	3.9E-04
3-Methylcholanthrene	-	-	-	-	-	-	6.62E-11	lb/MMBtu	5.49E-07	5.5E-07	2.4E-06
4-Nitrophenol	-	-	-	-	-	-	4.00E-09	lb/MMBtu	3.32E-05	3.3E-05	1.5E-04
7,12-Dimethylbenz(a)Anthracene	-	-	-	-	-	-	5.88E-10	lb/MMBtu	4.88E-06	4.9E-06	2.1E-05
Allyl Chloride	-	-	-	-	-	-	8.03E-06	lb/MMBtu	6.66E-02	6.7E-02	2.9E-01
Arsenic Trioxide	-	-	-	-	-	-	2.98E-05	lb/MMBtu	2.47E-01	2.5E-01	1.1E+00
Cadmium Oxide	-	-	-	-	-	-	3.20E-06	lb/MMBtu	2.66E-02	2.7E-02	1.2E-01
Calcium Cyanamide	-	-	-	-	-	-	3.39E-06	lb/MMBtu	2.81E-02	2.8E-02	1.2E-01
Chromic Acid (VI)	-	-	-	-	-	-	8.32E-06	lb/MMBtu	6.91E-02	6.9E-02	3.0E-01
Chromic Oxide	-	-	-	-	-	-	2.44E-05	lb/MMBtu	2.02E-01	2.0E-01	8.9E-01

Table A-5: Organic HAP (and Others) Emission Calculations: Main Boiler - 100% PRB Coal

Basis:

Coal Consumption Rate	488	ton Coal/hr
Fuel Oil Consumption Rate	9286	gal/hr
Maximum heat Input	8.30E-03	Trillion Btu/hr

Compound	Pulverized Coal [1] - AP42			Fuel Oil [2] - AP42			Pulverized Coal [3] - Utility Report to Congress, NEI Database, TRI Database			Worst Case Emissions (lb/hr)	Worst Case Emissions (tpy)
	Emission Factor	Units	Hourly Emissions (lb/hr)	Emission Factor	Units	Hourly Emissions (lb/hr)	Emission Factor	Units	Hourly Emissions (lb/hr)		
Dibenzo[a,j]Acridine	-	-	-	-	-	-	5.12E-07	lb/MMBtu	4.25E-03	4.2E-03	1.9E-02
Dibenzofuran	-	-	-	-	-	-	5.73E-07	lb/MMBtu	4.75E-03	4.8E-03	2.1E-02
Diethyl Sulfate	-	-	-	-	-	-	2.33E-06	lb/MMBtu	1.94E-02	1.9E-02	8.5E-02
Dimethyl Phthalate	-	-	-	-	-	-	9.64E-08	lb/MMBtu	8.00E-04	8.0E-04	3.5E-03
Manganese Dioxide	-	-	-	-	-	-	4.26E-05	lb/MMBtu	3.54E-01	3.5E-01	1.5E+00
Polychlorinated Biphenyls	-	-	-	-	-	-	1.37E-08	lb/MMBtu	1.14E-04	1.1E-04	5.0E-04
Polycyclic Organic Matter	-	-	-	-	-	-	6.21E-06	lb/MMBtu	5.16E-02	5.2E-02	2.3E-01
Propylene Dichloride	-	-	-	-	-	-	1.20E-06	lb/MMBtu	9.97E-03	1.0E-02	4.4E-02
Sodium Cyanide	-	-	-	-	-	-	8.09E-05	lb/MMBtu	6.71E-01	6.7E-01	2.9E+00
Toluene-2,4-Diamine	-	-	-	-	-	-	1.38E-08	lb/MMBtu	1.14E-04	1.1E-04	5.0E-04
Vinyl Chloride	-	-	-	-	-	-	7.14E-07	lb/MMBtu	5.92E-03	5.9E-03	2.6E-02
Phosphorus							31.50	lb/trillion btu	2.61E-01	2.6E-01	1.1E+00
										Total (ton/yr)	30.30

1)AP-42 Table 1.1-13, 1.1-14, & 1.1-18

2)AP-42 Tables 1.3-9 & 1.3-10

3) Test Report Data Table A-1 and A-4 from the study of Hazardous Air Pollutant emissions from Electric Utility Steam Generating Units- Final report to Congress (1998) and Data derived from EPA NEI HAP emissions inventory data - 2002 NEI V3 last updated September 2007 and TRI Database.

Table A-6 : EPA NEI HAP Database and TRI Database Emissions Information and EPA Clean Markets MMBtu/hr Values

STATE	FacilityName	Emission Unit ID	Boiler ID	Emission Release Point ID	Pollutant	Emissions (TPY)	HEAT INPUT (MMBtu)	Emission Rate (lb/MMBtu)	Avg. Emission Rate (lb/MMBtu)
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU003	3	SV001	1,2,4-Trichlorobenzene	0.0044	6302333	1.40E-06	1.28E-06
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU004	4	SV001	1,2,4-Trichlorobenzene	0.007045	12188405	1.16E-06	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU001	6	SV002	1,2,4-Trichlorobenzene	0.00394	4388784	1.80E-06	1.75E-06
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU002	7	SV002	1,2,4-Trichlorobenzene	0.003965	4670969	1.70E-06	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU003	8	SV003	1,2,4-Trichlorobenzene	0.011335	12939421	1.75E-06	
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU003	5	SV001	1,2,4-Trichlorobenzene	0.00402	6154367	1.31E-06	1.39E-06
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU004	6	SV001	1,2,4-Trichlorobenzene	0.006455	8744882	1.48E-06	
MN	NSP - SHERBURNE GENERATING PLANT	EU001	1	SV001	1,2,4-Trichlorobenzene	0.03807	53500053	1.42E-06	1.37E-06
MN	NSP - SHERBURNE GENERATING PLANT	EU002	2	SV001	1,2,4-Trichlorobenzene	0.035535	46259012	1.54E-06	
MN	NSP - SHERBURNE GENERATING PLANT	EU003	3	SV002	1,2,4-Trichlorobenzene	0.043815	75715065	1.16E-06	
MN	XCEL ENERGY - ALLEN S KING GENERATING	EU001	1	SV001	1,2,4-Trichlorobenzene	0.02459	18096637	2.72E-06	2.72E-06
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-1	3	S-3	1,2,4-Trichlorobenzene	0.032	29979755	2.13E-06	1.74E-06
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-2	4	S-4	1,2,4-Trichlorobenzene	0.033	32692109	2.02E-06	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-4	1	S-1	1,2,4-Trichlorobenzene	0.0165	24152709	1.37E-06	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-5	2	S-2	1,2,4-Trichlorobenzene	0.0175	24537935	1.43E-06	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-187	1	S-1	1,2,4-Trichlorobenzene	0.0039	4629725	1.68E-06	1.41E-06
NC	L V SUTTON STEAM ELECTRIC PLANT	G-188	2	S-1	1,2,4-Trichlorobenzene	0.00305	5203884	1.17E-06	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-189	3	S-2	1,2,4-Trichlorobenzene	0.0145	20975938	1.38E-06	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-29	1	S-1	1,2,4-Trichlorobenzene	0.013	25494527	1.02E-06	1.39E-06
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-30	2	S-2	1,2,4-Trichlorobenzene	0.031	47033163	1.32E-06	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-35	MULTI	S-3	1,2,4-Trichlorobenzene	0.031	35494009	1.75E-06	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-36	MULTI	S-4	1,2,4-Trichlorobenzene	0.03	40155873	1.49E-06	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-21	3	S-3	1,2,4-Trichlorobenzene	0.0015	6642892	4.52E-07	5.34E-07
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-22	1	S-1	1,2,4-Trichlorobenzene	0.0005	2817682	3.55E-07	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-23	2	S-2	1,2,4-Trichlorobenzene	0.001	2513404	7.96E-07	
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-17	1	S-1	1,2,4-Trichlorobenzene	0.062	67835959	1.83E-06	1.68E-06
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-18	2	S-2	1,2,4-Trichlorobenzene	0.053	68954797	1.54E-06	
NC	PROGRESS ENERGY - F LEE PLANT	G-2	1	S-1	1,2,4-Trichlorobenzene	0.0031	4016709	1.54E-06	1.48E-06
NC	PROGRESS ENERGY - F LEE PLANT	G-3	2	S-1	1,2,4-Trichlorobenzene	0.003	3913221	1.53E-06	
NC	PROGRESS ENERGY - F LEE PLANT	G-4	3	S-2	1,2,4-Trichlorobenzene	0.0095	13970082	1.36E-06	
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	1,2,4-Trichlorobenzene	0.0109	20568457	1.06E-06	1.37E-06
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	1,2,4-Trichlorobenzene	0.0127	19131766	1.33E-06	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	1,2,4-Trichlorobenzene	0.014	16183389	1.73E-06	
								Total Avg.	1.51E-06
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-1	5	S-1	1,3-Butadiene	0.0003	8135544	7.38E-08	1.05E-07
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-2	6	S-2	1,3-Butadiene	0.00075	11041675	1.36E-07	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-187	1	S-1	1,3-Butadiene	0.0013	4629725	5.62E-07	4.87E-07
NC	L V SUTTON STEAM ELECTRIC PLANT	G-188	2	S-1	1,3-Butadiene	0.00135	5203884	5.19E-07	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-189	3	S-2	1,3-Butadiene	0.004	20975938	3.81E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-29	1	S-1	1,3-Butadiene	0.002	25494527	1.57E-07	1.49E-07
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-30	2	S-2	1,3-Butadiene	0.0035	47033163	1.49E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-35	MULTI	S-3	1,3-Butadiene	0.0025	35494009	1.41E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-36	MULTI	S-4	1,3-Butadiene	0.003	40155873	1.49E-07	
NC	CP&L - MAYO FACILITY	G-46	MULTI	S-1	1,3-Butadiene	0.006	46476354	2.58E-07	2.58E-07
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-24	1	S-1	1,3-Butadiene	0.00035	2047727	3.42E-07	3.60E-07
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-25	2	S-1	1,3-Butadiene	0.0004	2120634	3.77E-07	
NC	PROGRESS ENERGY - F LEE PLANT	G-2	1	S-1	1,3-Butadiene	0.0015	4016709	7.47E-07	8.68E-07
NC	PROGRESS ENERGY - F LEE PLANT	G-3	2	S-1	1,3-Butadiene	0.0026	3913221	1.33E-06	
NC	PROGRESS ENERGY - F LEE PLANT	G-4	3	S-2	1,3-Butadiene	0.0037	13970082	5.30E-07	
								Total Avg.	3.71E-07
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	1,3-Dichloropropene	0.00525	20568457	5.10E-07	6.61E-07
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	1,3-Dichloropropene	0.0061	19131766	6.38E-07	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	1,3-Dichloropropene	0.00675	16183389	8.34E-07	
								Total Avg.	6.61E-07
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU003	3	SV001	1,4-Dichlorobenzene	0.003225	6302333	1.02E-06	9.35E-07
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU004	4	SV001	1,4-Dichlorobenzene	0.005165	12188405	8.48E-07	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU001	6	SV002	1,4-Dichlorobenzene	0.00289	4388784	1.32E-06	1.28E-06
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU002	7	SV002	1,4-Dichlorobenzene	0.002905	4670969	1.24E-06	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU003	8	SV003	1,4-Dichlorobenzene	0.00831	12939421	1.28E-06	
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU002	2	SV002	1,4-Dichlorobenzene	0.00241	4758198	1.01E-06	1.08E-06
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU003	3	SV002	1,4-Dichlorobenzene	0.003285	5695698	1.15E-06	
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU003	5	SV001	1,4-Dichlorobenzene	0.00295	6154367	9.59E-07	1.02E-06
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU004	6	SV001	1,4-Dichlorobenzene	0.004735	8744882	1.08E-06	
MN	NSP - SHERBURNE GENERATING PLANT	EU001	1	SV001	1,4-Dichlorobenzene	0.02792	53500053	1.04E-06	1.01E-06
MN	NSP - SHERBURNE GENERATING PLANT	EU002	2	SV001	1,4-Dichlorobenzene	0.02606	46259012	1.13E-06	
MN	NSP - SHERBURNE GENERATING PLANT	EU003	3	SV002	1,4-Dichlorobenzene	0.03213	75715065	8.49E-07	
MN	XCEL ENERGY - ALLEN S KING GENERATING	EU001	1	SV001	1,4-Dichlorobenzene	0.01803	18096637	1.99E-06	1.99E-06
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-1	5	S-1	1,4-Dichlorobenzene	0.0049	8135544	1.20E-06	1.10E-06
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-2	6	S-2	1,4-Dichlorobenzene	0.0055	11041675	9.96E-07	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-187	1	S-1	1,4-Dichlorobenzene	0.00285	4629725	1.23E-06	1.03E-06
NC	L V SUTTON STEAM ELECTRIC PLANT	G-188	2	S-1	1,4-Dichlorobenzene	0.00225	5203884	8.65E-07	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-189	3	S-2	1,4-Dichlorobenzene	0.0105	20975938	1.00E-06	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-29	1	S-1	1,4-Dichlorobenzene	0.0095	25494527	7.45E-07	1.02E-06
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-30	2	S-2	1,4-Dichlorobenzene	0.0225	47033163	9.57E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-35	MULTI	S-3	1,4-Dichlorobenzene	0.0225	35494009	1.27E-06	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-36	MULTI	S-4	1,4-Dichlorobenzene	0.022	40155873	1.10E-06	
NC	CP&L - MAYO FACILITY	G-46	MULTI	S-1	1,4-Dichlorobenzene	0.0265	46476354	1.14E-06	1.14E-06
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-21	3	S-3	1,4-Dichlorobenzene	0.001	6642892	3.01E-07	3.51E-07
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-22	1	S-1	1,4-Dichlorobenzene	0.0005	2817682	3.55E-07	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-23	2	S-2	1,4-Dichlorobenzene	0.0005	2513404	3.98E-07	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-83	2	S-2	1,4-Dichlorobenzene	0.0005	1575124	6.35E-07	6.36E-07
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-84	3	S-3	1,4-Dichlorobenzene	0.0005	2069663	4.83E-07	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-86	5	S-5	1,4-Dichlorobenzene	0.013	32950329	7.89E-07	
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-18	2	S-2	1,4-Dichlorobenzene	0.039	68954797	1.13E-06	1.13E-06
NC	PROGRESS ENERGY - F LEE PLANT	G-2	1	S-1	1,4-Dichlorobenzene	0.0023	4016709	1.15E-06	1.10E-06
NC	PROGRESS ENERGY - F LEE PLANT	G-3	2	S-1	1,4-Dichlorobenzene	0.0022	3913221	1.12E-06	
NC	PROGRESS ENERGY - F LEE PLANT	G-4	3	S-2	1,4-Dichlorobenzene	0.0071	13970082	1.02E-06	
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	1,4-Dichlorobenzene	0.008	20568457	7.78E-07	1.01E-06
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	1,4-Dichlorobenzene	0.0093	19131766	9.72E-07	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	1,4-Dichlorobenzene	0.0103	16183389	1.27E-06	
								Total Avg.	1.06E-06
NY	AES GREENIDGE LLC	G00004	6	00004	2,4,6-Trichlorophenol	0.0000002024	5056599	8.01E-10	8.01E-10
								Total Avg.	8.01E-10
NY	AES GREENIDGE LLC	G00004	6	00004	2,4-Dinitrophenol	0.000001656	5056599	6.55E-09	6.55E-09
UT	HUNTINGTON POWER PLANT	4034	2	1285	2,4-Dinitrophenol	0.0002	26754943	1.50E-08	1.50E-08
								Total Avg.	1.08E-08
OH	DP&L O.H. HUTCHINGS GENERATING STATION	H-1	H-1	001	3-Methylcholanthrene	4.9E-09	238277	4.11E-11	6.62E-11
OH	DP&L O.H. HUTCHINGS GENERATING STATION	H-2	H-2	002	3-Methylcholanthrene	1.29E-08	206693	1.25E-10	
OH	DP&L O.H. HUTCHINGS GENERATING STATION	H-3	H-3	003	3-Methylcholanthrene	2.85E-08	773126	7.37E-11	
OH	DP&L O.H. HUTCHINGS GENERATING STATION	H-4	H-4	004	3-Methylcholanthrene	3.17E-08	1115965	5.68E-11	
OH	DP&L O.H. HUTCHINGS GENERATING STATION	H-5	H-5	005	3-Methylcholanthrene	2.91E-08	1162990	5.00E-11	
OH	DP&L O.H. HUTCHINGS GENERATING STATION	H-6	H-6	006	3-Methylcholanthrene	3.22E-08	1271630	5.06E-11	
								Total Avg.	6.62E-11

Completed by: JDL 11-26-2008
Checked by: SAK 11-26-2008

Table A-6 : EPA NEI HAP Database and TRI Database Emissions Information and EPA Clean Markets MMBtu/hr Values

STATE	FacilityName	Emission Unit ID	Boiler ID	Emission Release Point ID	Pollutant	Emissions (TPY)	HEAT INPUT (MMBtu)	Emission Rate (lb/MMBtu)	Avg. Emission Rate (lb/MMBtu)
NY	AES GREENIDGE LLC	G00004	6	00004	4-Nitrophenol	0.00001012	5056599	4.00E-09	4.00E-09
								Total Avg.	4.00E-09
OH	DP&L, O.H. HUTCHINGS GENERATING STATION	H-1	H-1	001	7,12-Dimethylbenz[a]Anthracene	4.34E-08	238277	3.64E-10	5.88E-10
OH	DP&L, O.H. HUTCHINGS GENERATING STATION	H-2	H-2	002	7,12-Dimethylbenz[a]Anthracene	1.146E-07	206693	1.11E-09	
OH	DP&L, O.H. HUTCHINGS GENERATING STATION	H-3	H-3	003	7,12-Dimethylbenz[a]Anthracene	2.534E-07	773126	6.56E-10	
OH	DP&L, O.H. HUTCHINGS GENERATING STATION	H-4	H-4	004	7,12-Dimethylbenz[a]Anthracene	2.819E-07	1115965	5.05E-10	
OH	DP&L, O.H. HUTCHINGS GENERATING STATION	H-5	H-5	005	7,12-Dimethylbenz[a]Anthracene	2.586E-07	1162990	4.45E-10	
OH	DP&L, O.H. HUTCHINGS GENERATING STATION	H-6	H-6	006	7,12-Dimethylbenz[a]Anthracene	2.863E-07	1271630	4.50E-10	
								Total Avg.	5.88E-10
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-1	3	S-3	Allyl Chloride	0.1925	29979755	1.28E-05	1.05E-05
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-2	4	S-4	Allyl Chloride	0.199	32692109	1.22E-05	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-4	1	S-1	Allyl Chloride	0.1	24152709	8.28E-06	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-5	2	S-2	Allyl Chloride	0.1055	24537935	8.60E-06	
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-1	5	S-1	Allyl Chloride	0.0405	8135544	9.96E-06	9.01E-06
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-2	6	S-2	Allyl Chloride	0.0445	11041675	8.06E-06	
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-14	1	S-1	Allyl Chloride	0.0285	8399352	6.79E-06	7.13E-06
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-15	2	S-2	Allyl Chloride	0.0265	9210552	5.75E-06	
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-16	3	S-3	Allyl Chloride	0.0445	15956865	5.58E-06	
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-17	4	S-4	Allyl Chloride	0.061	14172222	8.61E-06	
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-18	5	S-5	Allyl Chloride	0.064	14313317	8.94E-06	
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-17	7	S-5	Allyl Chloride	0.012	4128778	5.81E-06	7.82E-06
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-18	8	S-6	Allyl Chloride	0.016	4012669	7.97E-06	
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-19	9	S-7	Allyl Chloride	0.023	5731728	8.03E-06	
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-20	10	S-8	Allyl Chloride	0.0285	6028904	9.45E-06	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-187	1	S-1	Allyl Chloride	0.0235	4629725	1.02E-05	8.52E-06
NC	L V SUTTON STEAM ELECTRIC PLANT	G-188	2	S-1	Allyl Chloride	0.0185	5203884	7.11E-06	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-189	3	S-2	Allyl Chloride	0.087	20975938	8.30E-06	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-29	1	S-1	Allyl Chloride	0.08	25494527	6.28E-06	8.48E-06
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-30	2	S-2	Allyl Chloride	0.1865	47033163	7.93E-06	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-35	MULTI	S-3	Allyl Chloride	0.1875	35494009	1.06E-05	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-36	MULTI	S-4	Allyl Chloride	0.1835	40155873	9.14E-06	
NC	CP&L - MAYO FACILITY	G-46	MULTI	S-1	Allyl Chloride	0.2195	46476354	9.45E-06	9.45E-06
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-24	1	S-1	Allyl Chloride	0.012	2047727	1.17E-05	1.10E-05
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-25	2	S-1	Allyl Chloride	0.011	2120634	1.04E-05	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-21	3	S-3	Allyl Chloride	0.009	6642892	2.71E-06	2.92E-06
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-22	1	S-1	Allyl Chloride	0.0035	2817682	2.48E-06	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-23	2	S-2	Allyl Chloride	0.0045	2513404	3.58E-06	
NC	DUKE ENERGY CORPORATION - BUCK STEAM STATION	G-1	5	S-2	Allyl Chloride	0.0025	1223835	4.09E-06	5.58E-06
NC	DUKE ENERGY CORPORATION - BUCK STEAM STATION	G-2	6	S-3	Allyl Chloride	0.0025	1362075	3.67E-06	
NC	DUKE ENERGY CORPORATION - BUCK STEAM STATION	G-3	7	S-6	Allyl Chloride	0.003	1603389	3.74E-06	
NC	DUKE ENERGY CORPORATION - BUCK STEAM STATION	G-4	8	S-6	Allyl Chloride	0.0245	6291656	7.79E-06	
NC	DUKE ENERGY CORPORATION - BUCK STEAM STATION	G-5	9	S-6	Allyl Chloride	0.0275	6379286	8.62E-06	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-82	1	S-1	Allyl Chloride	0.001	1649132	1.21E-06	4.44E-06
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-83	2	S-2	Allyl Chloride	0.003	1575124	3.81E-06	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-84	3	S-3	Allyl Chloride	0.0055	2069663	5.31E-06	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-85	4	S-4	Allyl Chloride	0.0055	2103923	5.23E-06	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-86	5	S-5	Allyl Chloride	0.109	32959329	6.61E-06	
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-17	1	S-1	Allyl Chloride	0.3745	67835959	1.10E-05	1.02E-05
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-18	2	S-2	Allyl Chloride	0.3225	68954797	9.35E-06	
NC	PROGRESS ENERGY - F LEE PLANT	G-2	1	S-1	Allyl Chloride	0.019	4016709	9.46E-06	9.01E-06
NC	PROGRESS ENERGY - F LEE PLANT	G-3	2	S-1	Allyl Chloride	0.018	3913221	9.20E-06	
NC	PROGRESS ENERGY - F LEE PLANT	G-4	3	S-2	Allyl Chloride	0.0585	13970082	8.38E-06	
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	Allyl Chloride	0.066	20568457	6.42E-06	8.32E-06
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	Allyl Chloride	0.077	19131766	8.05E-06	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	Allyl Chloride	0.085	16183389	1.05E-05	
								Total Avg.	8.03E-06
TX	GIBBONS CREEK	000002	1	000002	Arsenic Trioxide	0.525	35281328	2.98E-05	2.98E-05
								Total Avg.	2.98E-05
TX	GIBBONS CREEK	000002	1	000002	Cadmium Oxide	0.0565	35281328	3.20E-06	3.20E-06
								Total Avg.	3.20E-06
IA	MIDAMERICAN ENERGY CO. - LOUISA STATION	147281	101	117487	Calcium Cyanamide	0.08	47240697	3.39E-06	3.39E-06
								Total Avg.	3.39E-06
CO	TRI STATE GENERATION CRAIG	001	C1	001	Chlorine	8.9685	34560386	5.19E-04	4.05E-04
CO	TRI STATE GENERATION CRAIG	002	C2	002	Chlorine	9.2345	41101830	4.49E-04	
CO	TRI STATE GENERATION CRAIG	003	C3	003	Chlorine	4.3095	34695350	2.48E-04	
NE	NPPD SHELDON STATION	001	MULTI	001	Chlorine	7.52	8720555	1.72E-03	1.72E-03
NY	AES GREENIDGE LLC	G00004	6	00004	Chlorine	0.07268	5056599	2.87E-05	2.87E-05
PA	EXELON GENERATION CO/CROMBY GENERATION STATION	031	1	S01	Chlorine	9	8697485	2.07E-03	2.07E-03
TX	TOLK STATION	000001	171B	000001	Chlorine	3.9	30985535	2.52E-04	2.25E-04
TX	TOLK STATION	000002	172B	000002	Chlorine	3.8	38451725	1.98E-04	
TX	HARRINGTON STATION	000004	061B	000007	Chlorine	3.9	29124807	2.68E-04	2.25E-04
TX	HARRINGTON STATION	000005	062B	000008	Chlorine	2.6	30559917	1.70E-04	
TX	HARRINGTON STATION	000007	063B	000009	Chlorine	2.7	22717892	2.38E-04	
VA	DOMINION - SOUTHAMPTON POWER STATION	1	1	1	Chlorine	8.758	1994216	8.78E-03	8.78E-03
								Total Avg.	1.92E-03
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-82	1	S-1	Chromic Acid (VI)	0.0015	1649132	1.82E-06	8.32E-06
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-83	2	S-2	Chromic Acid (VI)	0.005	1575124	6.35E-06	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-84	3	S-3	Chromic Acid (VI)	0.0095	2069663	9.18E-06	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-85	4	S-4	Chromic Acid (VI)	0.011	2103923	1.05E-05	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-86	5	S-5	Chromic Acid (VI)	0.2275	32959329	1.38E-05	
								Total Avg.	8.32E-06
TX	GIBBONS CREEK	000002	1	000002	Chromic Oxide	0.4299	35281328	2.44E-05	2.44E-05
								Total Avg.	2.44E-05
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU003	3	SV001	Dibenzo[a,j]Acridine	0.002934486	6302333	9.31E-07	8.51E-07
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU004	4	SV001	Dibenzo[a,j]Acridine	0.00469816	12188495	7.71E-07	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU001	6	SV002	Dibenzo[a,j]Acridine	0.002628814	4388784	1.20E-06	7.77E-07
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU002	7	SV002	Dibenzo[a,j]Acridine	0.002644414	4670969	1.13E-06	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU003	8	SV003	Dibenzo[a,j]Acridine	0.0000805	12939421	7.73E-10	
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU003	5	SV001	Dibenzo[a,j]Acridine	0.002628254	6154367	8.72E-07	9.28E-07
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU004	6	SV001	Dibenzo[a,j]Acridine	0.004305114	8744882	9.85E-07	
MN	NSP - SHERBURNE GENERATING PLANT	EU001	1	SV001	Dibenzo[a,j]Acridine	0.000025	53580053	9.35E-10	8.20E-10
MN	NSP - SHERBURNE GENERATING PLANT	EU002	2	SV001	Dibenzo[a,j]Acridine	0.000002	46259012	8.65E-10	
MN	NSP - SHERBURNE GENERATING PLANT	EU003	3	SV002	Dibenzo[a,j]Acridine	0.000025	75715065	6.60E-10	
MN	XCEL ENERGY - ALLEN S KING GENERATING	EU001	1	SV001	Dibenzo[a,j]Acridine	0.0000015	18096637	1.66E-09	1.66E-09
								Total Avg.	5.12E-07

Completed by: JDF 11.26.2008
Checked by: SAK 11.26.2008

Table A-6 : EPA NEI HAP Database and TRI Database Emissions Information and EPA Clean Markets MMBtu/hr Values

STATE	FacilityName	Emission Unit ID	Boiler ID	Emission Release Point ID	Pollutant	Emissions (TPY)	HEAT INPUT (MMBtu)	Emission Rate (lb/MMBtu)	Avg. Emission Rate (lb/MMBtu)
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU003	3	SV001	Dibenzofuran	0.0017	6302333	5.39E-07	4.93E-07
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU004	4	SV001	Dibenzofuran	0.00272	12188405	4.46E-07	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU001	6	SV002	Dibenzofuran	0.00152	4388784	6.93E-07	6.75E-07
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU002	7	SV002	Dibenzofuran	0.00153	4670969	6.55E-07	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU003	8	SV003	Dibenzofuran	0.00438	12939421	6.77E-07	
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU002	2	SV002	Dibenzofuran	0.00127	4758198	5.34E-07	5.71E-07
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU003	3	SV002	Dibenzofuran	0.00173	5695698	6.07E-07	
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU003	5	SV001	Dibenzofuran	0.001555	6154367	5.05E-07	5.38E-07
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU004	6	SV001	Dibenzofuran	0.002495	8744882	5.71E-07	
MN	NSP - SHERBURNE GENERATING PLANT	EU001	1	SV001	Dibenzofuran	0.01472	53500053	5.50E-07	5.31E-07
MN	NSP - SHERBURNE GENERATING PLANT	EU002	2	SV001	Dibenzofuran	0.01374	46259012	5.94E-07	
MN	NSP - SHERBURNE GENERATING PLANT	EU003	3	SV002	Dibenzofuran	0.01694	75715065	4.47E-07	
MN	XCEL ENERGY - ALLEN S KING GENERATING	EU001	1	SV001	Dibenzofuran	0.009505	18096637	1.05E-06	1.05E-06
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-1	3	S-3	Dibenzofuran	0.0125	29979755	8.34E-07	6.67E-07
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-2	4	S-4	Dibenzofuran	0.0125	32692109	7.65E-07	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-4	1	S-1	Dibenzofuran	0.0065	24152709	5.38E-07	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-5	2	S-2	Dibenzofuran	0.0065	24537935	5.30E-07	
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-1	5	S-1	Dibenzofuran	0.0026	8135544	6.39E-07	5.78E-07
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-2	6	S-2	Dibenzofuran	0.00285	11041675	5.16E-07	
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-17	7	S-5	Dibenzofuran	0.001	4128778	4.84E-07	5.42E-07
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-18	8	S-6	Dibenzofuran	0.001	4012669	4.98E-07	
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-19	9	S-7	Dibenzofuran	0.0015	5731728	5.23E-07	
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-20	10	S-8	Dibenzofuran	0.002	6028904	6.63E-07	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-187	1	S-1	Dibenzofuran	0.0015	4629725	6.48E-07	5.46E-07
NC	L V SUTTON STEAM ELECTRIC PLANT	G-188	2	S-1	Dibenzofuran	0.0012	5203884	4.61E-07	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-189	3	S-2	Dibenzofuran	0.00555	20975938	5.29E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-29	1	S-1	Dibenzofuran	0.005	25494527	3.92E-07	5.38E-07
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-30	2	S-2	Dibenzofuran	0.012	47033163	5.10E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-35	MULTI	S-3	Dibenzofuran	0.012	35494009	6.76E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-36	MULTI	S-4	Dibenzofuran	0.0115	40155873	5.73E-07	
NC	CP&L - MAYO FACILITY	G-46	MULTI	S-1	Dibenzofuran	0.014	46476354	6.02E-07	6.02E-07
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-24	1	S-1	Dibenzofuran	0.00075	2047727	7.33E-07	6.37E-07
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-25	2	S-1	Dibenzofuran	0.0007	2120634	6.60E-07	
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-26	3	S-2	Dibenzofuran	0.0012	4620806	5.19E-07	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-21	3	S-3	Dibenzofuran	0.0005	6642892	1.51E-07	2.74E-07
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-23	2	S-2	Dibenzofuran	0.0005	2513404	3.98E-07	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-84	3	S-3	Dibenzofuran	0.0005	2069663	4.83E-07	4.61E-07
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-85	4	S-4	Dibenzofuran	0.0005	2103923	4.75E-07	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-86	5	S-5	Dibenzofuran	0.007	32959329	4.25E-07	
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-17	1	S-1	Dibenzofuran	0.024	67835959	7.08E-07	7.08E-07
NC	PROGRESS ENERGY - F LEE PLANT	G-2	1	S-1	Dibenzofuran	0.0012	4016709	5.98E-07	5.93E-07
NC	PROGRESS ENERGY - F LEE PLANT	G-3	2	S-1	Dibenzofuran	0.00115	3913221	5.88E-07	
PA	EXELON GENERATION CO CROMBY GENERATION STATION	031	1	S01	Dibenzofuran	0.0015	8697485	3.45E-07	3.45E-07
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	Dibenzofuran	0.00421	20568457	4.09E-07	5.32E-07
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	Dibenzofuran	0.00491	19131766	5.13E-07	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	Dibenzofuran	0.00545	16183389	6.74E-07	
								Total Avg.	5.73E-07
MO	KANSAS CITY POWER & LIGHT CO-MONTROSE GENERATING S	7847	3	10060	Diethyl Sulfate	0.0099	12220708	1.62E-06	2.21E-06
MO	KANSAS CITY POWER & LIGHT CO-MONTROSE GENERATING S	7848	2	10063	Diethyl Sulfate	0.0156	11907048	2.62E-06	
MO	KANSAS CITY POWER & LIGHT CO-MONTROSE GENERATING S	7849	1	10065	Diethyl Sulfate	0.0155	12946678	2.39E-06	
MO	KANSAS CITY POWER & LIGHT CO-HAWTHORN STATION	24676	5A	47800	Diethyl Sulfate	0.05645	41839589	2.70E-06	2.70E-06
MO	KANSAS CITY POWER & LIGHT CO-IATAN GENERATING STAT	16912	1	21121	Diethyl Sulfate	0.055	52608092	2.09E-06	2.09E-06
								Total Avg.	2.33E-06
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU003	3	SV001	Dimethyl Phthalate	0.00026	6302333	8.25E-08	7.57E-08
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU004	4	SV001	Dimethyl Phthalate	0.00042	12188405	6.89E-08	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU001	6	SV002	Dimethyl Phthalate	0.000235	4388784	1.07E-07	1.04E-07
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU002	7	SV002	Dimethyl Phthalate	0.000235	4670969	1.01E-07	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU003	8	SV003	Dimethyl Phthalate	0.00068	12939421	1.05E-07	
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU002	2	SV002	Dimethyl Phthalate	0.000195	4758198	8.20E-08	8.75E-08
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU003	3	SV002	Dimethyl Phthalate	0.000265	5695698	9.31E-08	
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU003	5	SV001	Dimethyl Phthalate	0.00024	6154367	7.80E-08	8.30E-08
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU004	6	SV001	Dimethyl Phthalate	0.000385	8744882	8.81E-08	
MN	NSP - SHERBURNE GENERATING PLANT	EU001	1	SV001	Dimethyl Phthalate	0.00228	53500053	8.52E-08	8.22E-08
MN	NSP - SHERBURNE GENERATING PLANT	EU002	2	SV001	Dimethyl Phthalate	0.00213	46259012	9.21E-08	
MN	NSP - SHERBURNE GENERATING PLANT	EU003	3	SV002	Dimethyl Phthalate	0.002625	75715065	6.93E-08	
MN	XCEL ENERGY - ALLEN S KING GENERATING	EU001	1	SV001	Dimethyl Phthalate	0.001475	18096637	1.63E-07	1.63E-07
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-1	3	S-3	Dimethyl Phthalate	0.002	29979755	1.33E-07	1.05E-07
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-2	4	S-4	Dimethyl Phthalate	0.002	32692109	1.22E-07	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-4	1	S-1	Dimethyl Phthalate	0.001	24152709	8.28E-08	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-5	2	S-2	Dimethyl Phthalate	0.001	24537935	8.15E-08	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-187	1	S-1	Dimethyl Phthalate	0.00025	4629725	1.08E-07	8.86E-08
NC	L V SUTTON STEAM ELECTRIC PLANT	G-188	2	S-1	Dimethyl Phthalate	0.0002	5203884	7.69E-08	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-189	3	S-2	Dimethyl Phthalate	0.00085	20975938	8.10E-08	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-29	1	S-1	Dimethyl Phthalate	0.001	25494527	7.84E-08	9.40E-08
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-30	2	S-2	Dimethyl Phthalate	0.002	47033163	8.50E-08	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-35	MULTI	S-3	Dimethyl Phthalate	0.002	35494009	1.13E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-36	MULTI	S-4	Dimethyl Phthalate	0.002	40155873	9.96E-08	
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-17	1	S-1	Dimethyl Phthalate	0.0035	67835959	1.03E-07	9.51E-08
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-18	2	S-2	Dimethyl Phthalate	0.003	68954797	8.70E-08	
NC	PROGRESS ENERGY - F LEE PLANT	G-2	1	S-1	Dimethyl Phthalate	0.0002	4016709	9.96E-08	9.59E-08
NC	PROGRESS ENERGY - F LEE PLANT	G-3	2	S-1	Dimethyl Phthalate	0.0002	3913221	1.02E-07	
NC	PROGRESS ENERGY - F LEE PLANT	G-4	3	S-2	Dimethyl Phthalate	0.0006	13970082	8.59E-08	
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	Dimethyl Phthalate	0.000655	20568457	6.37E-08	8.25E-08
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	Dimethyl Phthalate	0.00076	19131766	7.94E-08	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	Dimethyl Phthalate	0.000845	16183389	1.04E-07	
								Total Avg.	9.64E-08
TX	GIBBONS CREEK	000002	1	000002	Manganese Dioxide	0.752	35281328	4.26E-05	4.26E-05
								Total Avg.	4.26E-05
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	Polychlorinated Biphenyls	0.000109	20568457	1.06E-08	1.37E-08
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	Polychlorinated Biphenyls	0.000127	19131766	1.33E-08	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	Polychlorinated Biphenyls	0.00014	16183389	1.73E-08	
								Total Avg.	1.37E-08

Completed by: JDE 11-26-2008
Checked by: SAK 11-26-2008

Table A-6 : EPA NEI HAP Database and TRI Database Emissions Information and EPA Clean Markets MMBtu/hr Values

STATE	FacilityName	Emission Unit ID	Boiler ID	Emission Release Point ID	Pollutant	Emissions (TPY)	HEAT INPUT (MMBtu)	Emission Rate (lb/MMBtu)	Avg. Emission Rate (lb/MMBtu)
IA	IPL - LANSING GENERATING STATION	145136	4	114991	Polycyclic Organic Matter	0.0137	14456441	1.90E-06	1.90E-06
IA	IPL - M.L. KAPP GENERATING STATION	144559	2	114945	Polycyclic Organic Matter	0.0174	11586035	3.00E-06	3.00E-06
IA	IPL - BURLINGTON GENERATING STATION	145381	1	115078	Polycyclic Organic Matter	0.0138	14304675	1.93E-06	1.93E-06
IA	IPL - PRAIRIE CREEK GENERATING STATION	144096	4	114824	Polycyclic Organic Matter	0.00854	8096263	2.11E-06	2.11E-06
IA	MIDAMERICAN ENERGY CO. - LOUISA STATION	147281	101	117487	Polycyclic Organic Matter	0.05	47240697	2.12E-06	2.12E-06
IA	MUSCATINE POWER & WATER	163415	9	130857	Polycyclic Organic Matter	0.003849	12758228	6.03E-07	3.54E-07
IA	MUSCATINE POWER & WATER	163419	8	130911	Polycyclic Organic Matter	0.000354	6793436	1.04E-07	
IA	MIDAMERICAN ENERGY CO. - COUNCIL BLUFFS ENERGY CTR	143797	2	114672	Polycyclic Organic Matter	0.01	6281538	3.18E-06	2.69E-06
IA	MIDAMERICAN ENERGY CO. - COUNCIL BLUFFS ENERGY CTR	143798	3	114673	Polycyclic Organic Matter	0.05	45431195	2.20E-06	
IA	MIDAMERICAN ENERGY CO. - RIVERSIDE STATION	147465	9	131993	Polycyclic Organic Matter	0.01	6246921	3.20E-06	3.20E-06
IA	IPL - OTTUMWA GENERATING STATION	143977	1	114771	Polycyclic Organic Matter	0.0504	45946302	2.19E-06	2.19E-06
IA	MIDAMERICAN ENERGY CO. - GEORGE NEAL NORTH	148764	1	118711	Polycyclic Organic Matter	0.01	9662316	2.07E-06	1.97E-06
IA	MIDAMERICAN ENERGY CO. - GEORGE NEAL NORTH	148765	2	118712	Polycyclic Organic Matter	0.02	18870064	2.12E-06	
IA	MIDAMERICAN ENERGY CO. - GEORGE NEAL NORTH	148766	3	118713	Polycyclic Organic Matter	0.03	40185308	1.49E-06	
IA	MIDAMERICAN ENERGY CO. - GEORGE NEAL SOUTH	147140	4	117334	Polycyclic Organic Matter	0.05	45569716	2.19E-06	
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU003	3	SV001	Polycyclic Organic Matter	0.00704	6302333	2.23E-06	2.04E-06
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU004	4	SV001	Polycyclic Organic Matter	0.011275	12188405	1.85E-06	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU001	6	SV002	Polycyclic Organic Matter	0.005465	4388784	2.49E-06	2.42E-06
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU002	7	SV002	Polycyclic Organic Matter	0.005495	4670969	2.35E-06	
MN	MINNESOTA POWER INC - BOSWELL ENERGY CTR	EU001	1	SV001	Polycyclic Organic Matter	0.004215	5984583	1.41E-06	2.05E-06
MN	MINNESOTA POWER INC - BOSWELL ENERGY CTR	EU002	2	SV001	Polycyclic Organic Matter	0.004825	5815310	1.66E-06	
MN	MINNESOTA POWER INC - BOSWELL ENERGY CTR	EU003	3	SV003	Polycyclic Organic Matter	0.032735	26268955	2.49E-06	
MN	MINNESOTA POWER INC - BOSWELL ENERGY CTR	EU004	4	SV004	Polycyclic Organic Matter	0.054025	40948377	2.64E-06	
MN	ROCHESTER PUBLIC UTILITIES - SILVER LAKE	EU004	4	SV003	Polycyclic Organic Matter	0.00111	1668283	1.33E-06	1.33E-06
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU002	2	SV002	Polycyclic Organic Matter	0.00526	4758198	2.21E-06	2.20E-06
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU003	3	SV002	Polycyclic Organic Matter	0.006215	5695698	2.18E-06	
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU003	5	SV001	Polycyclic Organic Matter	0.005575	6154367	1.81E-06	1.93E-06
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU004	6	SV001	Polycyclic Organic Matter	0.00895	8744882	2.05E-06	
MN	MINNESOTA POWER INC - LASKIN ENERGY CTR	EU001	1	SV001	Polycyclic Organic Matter	0.004605	5141510	1.79E-06	2.04E-06
MN	MINNESOTA POWER INC - LASKIN ENERGY CTR	EU002	2	SV001	Polycyclic Organic Matter	0.00461	4031832	2.29E-06	
NE	OMAHA PUBLIC POWER DISTRICT - NORTH OMAHA POWER ST	01	MULTI	01	Polycyclic Organic Matter	0.0415	5101641	1.63E-05	1.63E-05
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-1	3	S-3	Polycyclic Organic Matter	0.0008	29979755	5.34E-08	4.38E-08
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-2	4	S-4	Polycyclic Organic Matter	0.00085	32692109	5.20E-08	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-4	1	S-1	Polycyclic Organic Matter	0.0004	24152709	3.31E-08	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-5	2	S-2	Polycyclic Organic Matter	0.00045	24537935	3.67E-08	
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-1	5	S-1	Polycyclic Organic Matter	0.147	8135544	3.61E-05	3.26E-05
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-2	6	S-2	Polycyclic Organic Matter	0.1605	11041675	2.91E-05	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-187	1	S-1	Polycyclic Organic Matter	0.0855	4629725	3.69E-05	3.09E-05
NC	L V SUTTON STEAM ELECTRIC PLANT	G-188	2	S-1	Polycyclic Organic Matter	0.067	5203884	2.57E-05	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-189	3	S-2	Polycyclic Organic Matter	0.3145	20975938	3.00E-05	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-29	1	S-1	Polycyclic Organic Matter	0.2885	25494527	2.26E-05	3.06E-05
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-30	2	S-2	Polycyclic Organic Matter	0.675	47033163	2.87E-05	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-35	MULTI	S-3	Polycyclic Organic Matter	0.6775	35494009	3.82E-05	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-36	MULTI	S-4	Polycyclic Organic Matter	0.663	40155873	3.30E-05	
NC	CP&L - MAYO FACILITY	G-46	MULTI	S-1	Polycyclic Organic Matter	0.7925	46476354	3.41E-05	3.41E-05
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-24	1	S-1	Polycyclic Organic Matter	0.0435	2047727	4.25E-05	3.64E-05
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-25	2	S-1	Polycyclic Organic Matter	0.04	2120634	3.77E-05	
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-26	3	S-2	Polycyclic Organic Matter	0.067	4620806	2.90E-05	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-21	3	S-3	Polycyclic Organic Matter	0.000025	6642892	7.53E-09	7.53E-09
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-21	3	S-4	Polycyclic Organic Matter	0.000025	6642892	7.53E-09	
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-17	1	S-1	Polycyclic Organic Matter	0.00155	67835959	4.57E-08	4.24E-08
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-18	2	S-2	Polycyclic Organic Matter	0.00135	68954797	3.92E-08	
NC	PROGRESS ENERGY - F LEE PLANT	G-2	1	S-1	Polycyclic Organic Matter	0.0685	4016709	3.41E-05	3.28E-05
NC	PROGRESS ENERGY - F LEE PLANT	G-3	2	S-1	Polycyclic Organic Matter	0.066	3913221	3.37E-05	
NC	PROGRESS ENERGY - F LEE PLANT	G-4	3	S-2	Polycyclic Organic Matter	0.2125	13970082	3.04E-05	
OH	DP&L, J.M. STUART GENERATING STATION	B001	1	000002	Polycyclic Organic Matter	0.04446226	30646464	2.91E-06	2.91E-06
OH	DP&L, J.M. STUART GENERATING STATION	B002	2	000003	Polycyclic Organic Matter	0.0419861	34601223	2.43E-06	2.41E-06
OH	DP&L, J.M. STUART GENERATING STATION	B003	3	000004	Polycyclic Organic Matter	0.0401248	37740832	2.13E-06	
OH	DP&L, J.M. STUART GENERATING STATION	B004	4	000005	Polycyclic Organic Matter	0.040821	30645557	2.66E-06	
OH	DP&L, KILLEN GENERATING STATION	B001	2	000002	Polycyclic Organic Matter	0.0381063	41790006	1.82E-06	1.82E-06
OH	CLEVELAND ELECTRIC ILLUMINATING CO., ASHTABULA PLA	B008	7	000001	Polycyclic Organic Matter	0.0182953	18695534	1.96E-06	1.96E-06
OH	R. E. BURGER PLANT	B011	7	000003	Polycyclic Organic Matter	0.009946653	9584154	2.08E-06	1.91E-06
OH	R. E. BURGER PLANT	B012	8	000003	Polycyclic Organic Matter	0.008185102	9424262	1.74E-06	
OH	CITY OF HAMILTON DEPARTMENT OF PUBLIC UTILITIES	B009	9	000003	Polycyclic Organic Matter	0.00829383	3410328	1.72E-06	1.72E-06
OH	CINCINNATI GAS & ELECTRIC CO., WM. H. ZIMMER	B006	1	000021	Polycyclic Organic Matter	0.0972063	83026148	2.34E-06	2.34E-06
OH	CONESVILLE POWER PLANT	B003	3	000006	Polycyclic Organic Matter	0.008348	5002365	3.33E-06	3.33E-06
OH	GAVIN POWER PLANT	B003	1	000003	Polycyclic Organic Matter	0.0861381	71980848	2.39E-06	2.06E-06
OH	GAVIN POWER PLANT	B004	2	000004	Polycyclic Organic Matter	0.0807236	93686331	1.72E-06	
OH	CARDINAL POWER PLANT (CARDINAL OPERATING COMPANY)	B001	1	000005	Polycyclic Organic Matter	0.0283875	31928035	1.83E-06	1.69E-06
OH	CARDINAL POWER PLANT (CARDINAL OPERATING COMPANY)	B002	2	000007	Polycyclic Organic Matter	0.0347251	36636142	1.90E-06	
OH	CARDINAL POWER PLANT (CARDINAL OPERATING COMPANY)	B009	3	000009	Polycyclic Organic Matter	0.0263268	39408868	1.34E-06	
OH	W. H. SAMMIS PLANT	B007	1	000007	Polycyclic Organic Matter	0.0151319	12507034	2.42E-06	2.26E-06
OH	W. H. SAMMIS PLANT	B008	2	000007	Polycyclic Organic Matter	0.0115695	11855430	1.95E-06	
OH	W. H. SAMMIS PLANT	B009	3	000008	Polycyclic Organic Matter	0.0150304	11170922	2.69E-06	
OH	W. H. SAMMIS PLANT	B010	4	000008	Polycyclic Organic Matter	0.0146131	10549109	2.77E-06	
OH	W. H. SAMMIS PLANT	B011	5	000010	Polycyclic Organic Matter	0.0217377	18902199	2.30E-06	
OH	W. H. SAMMIS PLANT	B012	6	000010	Polycyclic Organic Matter	0.0448171	43024605	2.08E-06	
OH	W. H. SAMMIS PLANT	B013	7	000009	Polycyclic Organic Matter	0.0370883	45614013	1.63E-06	
OH	CLEVELAND ELECTRIC ILLUMINATING CO., EASTLAKE PLA	B001	1	000001	Polycyclic Organic Matter	0.008563119	6610984	2.59E-06	2.02E-06
OH	CLEVELAND ELECTRIC ILLUMINATING CO., EASTLAKE PLA	B002	2	000002	Polycyclic Organic Matter	0.009027111	9582228	1.88E-06	
OH	CLEVELAND ELECTRIC ILLUMINATING CO., EASTLAKE PLA	B003	3	000003	Polycyclic Organic Matter	0.008533363	8606980	1.98E-06	
OH	CLEVELAND ELECTRIC ILLUMINATING CO., EASTLAKE PLA	B004	4	000004	Polycyclic Organic Matter	0.0164113	17644289	1.86E-06	
OH	CLEVELAND ELECTRIC ILLUMINATING CO., EASTLAKE PLA	B005	5	000005	Polycyclic Organic Matter	0.037805	42648146	1.77E-06	
OH	AVON LAKE POWER PLANT	B010	10	000001	Polycyclic Organic Matter	0.00532514	3406103	3.13E-06	2.81E-06
OH	AVON LAKE POWER PLANT	B012	12	000002	Polycyclic Organic Matter	0.0394663	31705425	2.49E-06	
OH	TOLEDO EDISON CO., BAY SHORE POWER PLANT	B002	2	000002	Polycyclic Organic Matter	0.0111379	9642914	2.31E-06	1.99E-06
OH	TOLEDO EDISON CO., BAY SHORE POWER PLANT	B003	3	000002	Polycyclic Organic Matter	0.00953528	10364396	1.84E-06	
OH	TOLEDO EDISON CO., BAY SHORE POWER PLANT	B004	4	000002	Polycyclic Organic Matter	0.0160941	17544350	1.83E-06	
OH	MUSKINGUM RIVER POWER PLANT	B006	5	000004	Polycyclic Organic Matter	0.0412772	35301392	2.34E-06	2.34E-06
OH	R. H. GORSUCH STATION	B001	1	000007	Polycyclic Organic Matter	0.005530254	3621082	2.93E-06	2.86E-06
OH	R. H. GORSUCH STATION	B002	2	000007	Polycyclic Organic Matter	0.005080074	4002690	2.54E-06	
OH	R. H. GORSUCH STATION	B003	3	000007	Polycyclic Organic Matter	0.004672331	3229962	2.89E-06	
OH	R. H. GORSUCH STATION	B004	4	000007	Polycyclic Organic Matter	0.005178867	3373420	3.07E-06	
PA	ALLEGHENY ENERGY SUPPLY CO ARMSTRONG POWER STATION	031	1	S03	Polycyclic Organic Matter	0.011	8744228	2.52E-06	2.49E-06
PA	ALLEGHENY ENERGY SUPPLY CO ARMSTRONG POWER STATION	032	2	S04	Polycyclic Organic Matter	0.0115	9341468	2.46E-06	
SC	DUKE ENERGY:LEE	001	1	1	Polycyclic Organic Matter	0.003701	3146584	2.99E-06	2.45E-06
SC	DUKE ENERGY:LEE	002	2	2	Polycyclic Organic Matter	0.003605	3298670	2.79E-06	
SC	DUKE ENERGY:LEE	003	3	3	Polycyclic Organic Matter	0.005551	7049954	1.57E-06	
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	Polycyclic Organic Matter	0.0098	20568457	9.53E-07	1.24E-06
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	Polycyclic Organic Matter	0.0114	19131766	1.19E-06	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	Polycyclic Organic Matter	0.0128	16183389	1.58E-06	
TX	GIBBONS CREEK	000002	1	000002	Polycyclic Organic Matter	0.0029	35281328	1.64E-07	1.64E-07
								Total Avg.	6.21E-06
NY	AES GREENIDGE LLC	GR0004	6	00004	Propylene Dichloride	0.003036	5056599	1.20E-06	1.20E-06

Completed by: HDE 11.26.2008
Checked by: SAK 11.26.2008

Table A-6 : EPA NEI HAP Database and TRI Database Emissions Information and EPA Clean Markets MMBtu/hr Values

STATE	FacilityName	Emission Unit ID	Boiler ID	Emission Release Point ID	Pollutant	Emissions (TPY)	HEAT INPUT (MMBtu)	Emission Rate (lb/MMBtu)	Avg. Emission Rate (lb/MMBtu)
								Total Avg.	1.20E-06
UT	CARBON POWER PLANT	3974	1	1001	Sodium Cyanide	0.31635	6740398	9.39E-05	9.74E-05
UT	CARBON POWER PLANT	3976	2	1002	Sodium Cyanide	0.46915	9300537	1.01E-04	
UT	HUNTER POWER PLANT	4026	1	1281	Sodium Cyanide	1.0747	37638145	5.71E-05	8.98E-05
UT	HUNTER POWER PLANT	4028	2	1282	Sodium Cyanide	1.71355	32252702	1.06E-04	
UT	HUNTER POWER PLANT	4030	3	1283	Sodium Cyanide	1.828	34434000	1.06E-04	
UT	HUNTINGTON POWER PLANT	4032	1	1284	Sodium Cyanide	1.5591	32929773	9.47E-05	1.14E-04
UT	HUNTINGTON POWER PLANT	4034	2	1285	Sodium Cyanide	1.7858	26754943	1.33E-04	
UT	INTERMOUNTAIN GENERATION STATION	2381	1SGA	1709	Sodium Cyanide	0.88393	83006107	2.13E-05	2.21E-05
UT	INTERMOUNTAIN GENERATION STATION	2382	2SGA	1710	Sodium Cyanide	0.840831	73285622	2.29E-05	
								Total Avg.	8.09E-05
MO	KANSAS CITY POWER & LIGHT CO-MONTROSE GENERATING S	7848	2	10063	Toluene-2,4-Diamine	0.0001	11907048	1.68E-08	1.61E-08
MO	KANSAS CITY POWER & LIGHT CO-MONTROSE GENERATING S	7849	1	10065	Toluene-2,4-Diamine	0.0001	12946678	1.54E-08	
MO	KANSAS CITY POWER & LIGHT CO-IATAN GENERATING STAT	16912	1	21121	Toluene-2,4-Diamine	0.0003	52608092	1.14E-08	1.14E-08
								Total Avg.	1.38E-08
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU003	3	SV001	Vinyl Chloride	0.00214	6302333	6.79E-07	6.21E-07
MN	NSP DBA XCEL ENERGY - BLACK DOG	EU004	4	SV001	Vinyl Chloride	0.003425	12188405	5.62E-07	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU001	6	SV002	Vinyl Chloride	0.001915	4388784	8.73E-07	8.50E-07
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU002	7	SV002	Vinyl Chloride	0.00193	4670969	8.26E-07	
MN	XCEL ENERGY - RIVERSIDE GENERATING PLANT	EU003	8	SV003	Vinyl Chloride	0.005515	12939421	8.52E-07	
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU002	2	SV002	Vinyl Chloride	0.0016	4758198	6.73E-07	7.19E-07
MN	OTTER TAIL POWER CO - HOOT LAKE PLANT	EU003	3	SV002	Vinyl Chloride	0.00218	5695698	7.65E-07	
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU003	5	SV001	Vinyl Chloride	0.001955	6154367	6.35E-07	6.77E-07
MN	XCEL ENERGY - HIGH BRIDGE GENERATING	EU004	6	SV001	Vinyl Chloride	0.00314	8744882	7.18E-07	
MN	NSP - SHERBURNE GENERATING PLANT	EU001	1	SV001	Vinyl Chloride	0.018525	53500053	6.93E-07	6.68E-07
MN	NSP - SHERBURNE GENERATING PLANT	EU002	2	SV001	Vinyl Chloride	0.01729	46259012	7.48E-07	
MN	NSP - SHERBURNE GENERATING PLANT	EU003	3	SV002	Vinyl Chloride	0.02132	75715065	5.63E-07	
MN	XCEL ENERGY - ALLEN S KING GENERATING	EU001	1	SV001	Vinyl Chloride	0.011965	18096637	1.32E-06	1.32E-06
NY	AES GREENIDGE LLC	G00004	6	00004	Vinyl Chloride	0.001656	5056599	6.55E-07	6.55E-07
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-1	3	S-3	Vinyl Chloride	0.0155	29979755	1.03E-06	8.42E-07
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-2	4	S-4	Vinyl Chloride	0.016	32692109	9.79E-07	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-4	1	S-1	Vinyl Chloride	0.008	24152709	6.62E-07	
NC	DUKE ENERGY CORPORATION - MARSHALL STEAM STATION	G-5	2	S-2	Vinyl Chloride	0.0085	24537935	6.93E-07	
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-1	5	S-1	Vinyl Chloride	0.00325	8135544	7.99E-07	7.16E-07
NC	PROGRESS ENERGY CAROLINAS - CAPE FEAR PLANT	G-2	6	S-2	Vinyl Chloride	0.0035	11041675	6.34E-07	
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-14	1	S-1	Vinyl Chloride	0.0025	8399352	5.95E-07	5.75E-07
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-15	2	S-2	Vinyl Chloride	0.002	9210552	4.34E-07	
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-16	3	S-3	Vinyl Chloride	0.0035	15956865	4.39E-07	
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-17	4	S-4	Vinyl Chloride	0.005	14172222	7.06E-07	
NC	DUKE ENERGY CORPORATION - ALLEN STEAM STATION	G-18	5	S-5	Vinyl Chloride	0.005	14313317	6.99E-07	
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-18	8	S-6	Vinyl Chloride	0.0015	4012669	7.48E-07	7.58E-07
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-19	9	S-7	Vinyl Chloride	0.002	5731728	6.98E-07	
NC	DUKE ENERGY CORPORATION - RIVERBEND STEAM STATION	G-20	10	S-8	Vinyl Chloride	0.0025	6028904	8.29E-07	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-187	1	S-1	Vinyl Chloride	0.0019	4629725	8.21E-07	6.88E-07
NC	L V SUTTON STEAM ELECTRIC PLANT	G-188	2	S-1	Vinyl Chloride	0.0015	5203884	5.76E-07	
NC	L V SUTTON STEAM ELECTRIC PLANT	G-189	3	S-2	Vinyl Chloride	0.007	20975938	6.67E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-29	1	S-1	Vinyl Chloride	0.0065	25494527	5.10E-07	6.79E-07
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-30	2	S-2	Vinyl Chloride	0.015	47033163	6.38E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-35	MULTI	S-3	Vinyl Chloride	0.015	35494009	8.45E-07	
NC	CP&L - ROXBORO STEAM ELECTRIC PLANT	G-36	MULTI	S-4	Vinyl Chloride	0.0145	40155873	7.22E-07	
NC	CP&L - MAYO FACILITY	G-46	MULTI	S-1	Vinyl Chloride	0.0175	46476354	7.53E-07	7.53E-07
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-24	1	S-1	Vinyl Chloride	0.00095	2047727	9.28E-07	8.09E-07
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-25	2	S-1	Vinyl Chloride	0.0009	2120634	8.49E-07	
NC	PROGRESS ENERGY CAROLINAS, INC., W.H. WEATHERSPOON	G-26	3	S-2	Vinyl Chloride	0.0015	4620806	6.49E-07	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-21	3	S-3	Vinyl Chloride	0.00075	6642892	2.26E-07	3.26E-07
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-22	1	S-1	Vinyl Chloride	0.0005	2817682	3.55E-07	
NC	DUKE ENERGY CORP - DAN RIVER STEAM STATION	G-23	2	S-2	Vinyl Chloride	0.0005	2513404	3.98E-07	
NC	DUKE ENERGY CORPORATION - BUCK STEAM STATION	G-3	7	S-6	Vinyl Chloride	0.0005	1603389	6.24E-07	6.29E-07
NC	DUKE ENERGY CORPORATION - BUCK STEAM STATION	G-4	8	S-6	Vinyl Chloride	0.002	6291656	6.36E-07	
NC	DUKE ENERGY CORPORATION - BUCK STEAM STATION	G-5	9	S-6	Vinyl Chloride	0.002	6379286	6.27E-07	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-84	3	S-3	Vinyl Chloride	0.0005	2069663	4.83E-07	4.91E-07
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-85	4	S-4	Vinyl Chloride	0.0005	2103923	4.75E-07	
NC	DUKE ENERGY CORPORATION - CLIFFSIDE STEAM STATION	G-86	5	S-5	Vinyl Chloride	0.0085	32959329	5.16E-07	
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-17	1	S-1	Vinyl Chloride	0.03	67835959	8.84E-07	8.19E-07
NC	DUKE ENERGY CORP - BELEWS CREEK STEAM STATION	G-18	2	S-2	Vinyl Chloride	0.026	68954797	7.54E-07	
NC	PROGRESS ENERGY - F LEE PLANT	G-2	1	S-1	Vinyl Chloride	0.0015	4016709	7.47E-07	7.20E-07
NC	PROGRESS ENERGY - F LEE PLANT	G-3	2	S-1	Vinyl Chloride	0.00145	3913221	7.41E-07	
NC	PROGRESS ENERGY - F LEE PLANT	G-4	3	S-2	Vinyl Chloride	0.0047	13970082	6.73E-07	
TN	ALLEN FOSSIL PLANT	Boilr1	1	Stack1	Vinyl Chloride	0.0053	20568457	5.15E-07	6.70E-07
TN	ALLEN FOSSIL PLANT	Boilr2	2	Stack2	Vinyl Chloride	0.0062	19131766	6.48E-07	
TN	ALLEN FOSSIL PLANT	Boilr3	3	Stack3	Vinyl Chloride	0.00685	16183389	8.47E-07	
								Total Avg.	7.14E-07

Completed by: JDF 11-26-2008
Checked by: SAK 11-26-2008

TOXIC EMISSION CALCULATIONS

Table A-7: Toxic Emission Calculations: Main Boiler

Basis:

PRB Coal Consumption Rate	488	ton Coal/hr
50-50 Blend Coal Consumption rate	417	ton Coal/hr
Fuel Oil Consumption Rate	9286	gal/hr
Maximum heat Input	8.30E-03	Trillion Btu/hr

Compound	Pulverized Coal [1] -AP-42				Fuel Oil [2]-AP-42			Pulverized Coal [3] -Utility report to Congress, NEI Database, TRI Database			Pulverized Coal[4] -MACT Analysis						Worst Case Emissions (lb/hr)	Worst Case Emissions (tpy)[5]
	Emission Factor	Units	Hourly Emissions (lb/hr) (PRB Coal)	Hourly Emissions (lb/hr) 50-50 Blend	Emission Factor	Units	Hourly Emissions (lb/hr)	Emission Factor	Units	Hourly Emissions (lb/hr)	Emission Factor (PRB Coal)	Units	Hourly Emissions (lb/hr) (PRB Coal)	Emission Factor (50-50 Blend Coal)	Units	Hourly Emissions (lb/hr) 50-50 Blend		
Organics																		
Acenaphthene	5.10E-07	lb/ton	2.49E-04	2.13E-04	2.1E-05	lb/1,000 gal	2.0E-04	0.013	lb/trillion btu	1.08E-04							2.49E-04	1.1E-03
Acenaphthylene	2.50E-07	lb/ton	1.22E-04	1.04E-04	2.5E-07	lb/1,000 gal	2.3E-06	0.004	lb/trillion btu	3.32E-05							1.22E-04	5.3E-04
Acetaldehyde	5.70E-04	lb/ton	2.78E-01	2.38E-01				6.75	lb/trillion btu	5.60E-02							2.78E-01	1.2E+00
Acetophenone	1.50E-05	lb/ton	7.32E-03	6.26E-03				0.68	lb/trillion btu	5.64E-03							7.32E-03	3.2E-02
Acrolein	2.90E-04	lb/ton	1.42E-01	1.21E-01				3.25	lb/trillion btu	2.70E-02							1.42E-01	6.2E-01
Anthracene	2.10E-07	lb/ton	1.02E-04	8.76E-05	1.2E-06	lb/1,000 gal	1.1E-05	0.004	lb/trillion btu	3.32E-05							1.02E-04	4.5E-04
Benzene	1.30E-03	lb/ton	6.34E-01	5.42E-01	2.14E-04	lb/1,000 gal	2.0E-03	2.5	lb/trillion btu	2.08E-02							6.34E-01	2.8E+00
Benzo(a)anthracene	8.00E-08	lb/ton	3.90E-05	3.34E-05	4.0E-06	lb/1,000 gal	3.7E-05	0.002	lb/trillion btu	1.66E-05							3.90E-05	1.7E-04
Benzo(a)pyrene	3.80E-08	lb/ton	1.85E-05	1.58E-05				0.001	lb/trillion btu	8.30E-06							1.85E-05	8.1E-05
Benzo(b)fluoranthene			-	-				0.008	lb/trillion btu	6.64E-05							6.64E-05	2.9E-04
Benzo(e)pyrene			-	-				0.001	lb/trillion btu	8.30E-06							8.30E-06	3.6E-05
Benzo(g,h,i)perylene			-	-	2.26E-06	lb/1,000 gal	2.1E-05	0.002	lb/trillion btu	1.66E-05							2.10E-05	9.2E-05
Benzo(g,h,i)pyrene	2.70E-08	lb/ton	1.32E-05	1.13E-05													1.32E-05	5.8E-05
Benzo(b,k)fluoranthene	1.10E-07	lb/ton	5.37E-05	4.59E-05	1.48E-06	lb/1,000 gal	1.4E-05	0.004	lb/trillion btu	3.32E-05							5.37E-05	2.4E-04
Benzo(k)fluoranthene			-	-				0.004	lb/trillion btu	3.32E-05							3.32E-05	1.5E-04
Benzyl chloride	7.00E-04	lb/ton	3.42E-01	2.92E-01				0.006	lb/trillion btu	4.98E-05							3.42E-01	1.5E+00
Biphenyl	1.70E-06	lb/ton	8.30E-04	7.09E-04				0.18	lb/trillion btu	1.49E-03							1.49E-03	6.5E-03
bis(2-Ethylhexyl)phthalate	7.30E-05	lb/ton	3.56E-02	3.04E-02				4.1	lb/trillion btu	3.40E-02							3.56E-02	1.6E-01
Bromoform	3.90E-05	lb/ton	1.90E-02	1.63E-02				6.6	lb/trillion btu	5.48E-02							5.48E-02	2.4E-01
2-Butanone (MEK)	3.90E-04	lb/ton	1.90E-01	1.63E-01													1.90E-01	
Carbon tetrachloride			-	-				3.25	lb/trillion btu	2.70E-02							2.70E-02	1.2E-01
Carbon disulfide	1.30E-04	lb/ton	6.34E-02	5.42E-02				4.3	lb/trillion btu	3.57E-02							6.34E-02	2.8E-01
Chlorobenzene	2.20E-05	lb/ton	1.07E-02	9.17E-03				3.18	lb/trillion btu	2.64E-02							2.64E-02	1.2E-01
Chloroform	5.90E-05	lb/ton	2.88E-02	2.46E-02				3.2	lb/trillion btu	2.66E-02							2.88E-02	1.3E-01
Chloromethane	5.30E-04	lb/ton	2.59E-01	2.21E-01				5.9	lb/trillion btu	4.90E-02							2.59E-01	1.1E+00
2-Chloronaphthalene			-					0.04	lb/trillion btu	3.32E-04							3.32E-04	1.5E-03
2-Chloroacetophenone	7.00E-06	lb/ton	3.42E-03	2.92E-03				0.29	lb/trillion btu	2.41E-03							3.42E-03	1.5E-02
Chrysene	1.00E-07	lb/ton	4.88E-05	4.17E-05	2.4E-06	lb/1,000 gal	2.2E-05	0.003	lb/trillion btu	2.49E-05							4.88E-05	2.1E-04
Cumene	5.30E-06	lb/ton	2.59E-03	2.21E-03				0.29	lb/trillion btu	2.41E-03			-				2.59E-03	1.1E-02
Cyanide	2.50E-03	lb/ton	1.22E+00	1.04E+00				28.00	lb/trillion btu	2.32E-01							1.22E+00	5.3E+00
Dibenzo(a,h)anthracene			-	-	1.7E-06	lb/1,000 gal	1.6E-05	0.001	lb/trillion btu	8.30E-06							1.55E-05	6.8E-05
Dibutyl phthalate				-				2.8	lb/trillion btu	2.32E-02							2.32E-02	1.0E-01
Dimethyl sulfate	4.80E-05	lb/ton	2.34E-02	2.00E-02													2.34E-02	1.0E-01
2,4-Dinitrotoluene	2.80E-07	lb/ton	1.37E-04	1.17E-04				0.015	lb/trillion btu	1.25E-04							1.37E-04	6.0E-04
Ethylbenzene	9.40E-05	lb/ton	4.59E-02	3.92E-02	6.36E-05	lb/1,000 gal	5.9E-04	0.41	lb/trillion btu	3.40E-03							4.59E-02	2.0E-01
Ethyl Chloride	4.20E-05	lb/ton	2.05E-02	1.75E-02				2.4	lb/trillion btu	1.99E-02							2.05E-02	9.0E-02
Ethylene dichloride	4.00E-05	lb/ton	1.95E-02	1.67E-02				3.1	lb/trillion btu	2.57E-02							2.57E-02	1.1E-01
Ethylene dibromide	1.20E-06	lb/ton	5.86E-04	5.00E-04													5.86E-04	2.6E-03
Fluoranthene	7.10E-07	lb/ton	3.46E-04	2.96E-04	4.8E-06	lb/1,000 gal	4.5E-05	0.016	lb/trillion btu	1.33E-04							3.46E-04	1.5E-03
Fluorene	9.10E-07	lb/ton	4.44E-04	3.79E-04	4.5E-06	lb/1,000 gal	4.2E-05	0.013	lb/trillion btu	1.08E-04							4.44E-04	1.9E-03
Formaldehyde	2.40E-04	lb/ton	1.17E-01	1.00E-01	3.3E-02	lb/1,000 gal	3.1E-01	4.0	lb/trillion btu	3.32E-02							3.06E-01	1.3E+00
Hexane	6.70E-05	lb/ton	3.27E-02	2.79E-02				0.83	lb/trillion btu	6.89E-03							3.27E-02	1.4E-01
Hydrogen chloride	1.20E+00	lb/ton	5.86E+02	5.00E+02				13634.6623	lb/trillion btu	1.13E+02	3.22E-04	lb/MMBtu	2.68E+00	2.89E-03	lb/MMBtu	2.40E+01	2.40E+01	1.1E+02
Hydrogen Fluoride	1.50E-01	lb/ton	7.32E+01	6.26E+01				2260.714975	lb/trillion btu	1.88E+01	2.68E-04	lb/MMBtu	2.22E+00	2.13E-04	lb/MMBtu	1.77E+00	2.22E+00	9.7E+00
Indeno(1,2,3,c,d)pyrene	6.10E-08	lb/ton	2.98E-05	2.54E-05	2.1E-06	lb/1,000 gal	2.0E-05	0.003	lb/trillion btu	2.49E-05							2.98E-05	1.3E-04
Isophorone	5.80E-04	lb/ton	2.83E-01	2.42E-01				24	lb/trillion btu	1.99E-01							2.83E-01	1.2E+00
Methyl Bromide	1.60E-04	lb/ton	7.81E-02	6.67E-02				0.89	lb/trillion btu	7.39E-03							7.81E-02	3.4E-01
Methyl hydrazine	1.70E-04	lb/ton	8.30E-02	7.09E-02													8.30E-02	3.6E-01
MMA	2.00E-05	lb/ton	9.76E-03	8.34E-03				1.1	lb/trillion btu	9.13E-03							9.76E-03	4.3E-02
2-Methylnaphthalene			-	-				0.032	lb/trillion btu	2.66E-04							2.66E-04	1.2E-03
MTBE	3.50E-05	lb/ton	1.71E-02	1.46E-02				1.4	lb/trillion btu	1.16E-02							1.71E-02	7.5E-02
Methylene chloride	2.90E-04	lb/ton	1.42E-01	1.21E-01				13	lb/trillion btu	1.08E-01							1.42E-01	6.2E-01
Naphthalene	1.30E-05	lb/ton	6.34E-03	5.42E-03	1.13E-03	lb/1,000 gal	1.0E-02	0.77	lb/trillion btu	6.39E-03							1.05E-02	4.6E-02
5-Methyl chrysene	2.20E-08	lb/ton	1.07E-05	9.17E-06													1.07E-05	4.7E-05
OCDD					3.10E-09	lb/1,000 gal	2.9E-08										2.88E-08	1.3E-07
Phenanthrene	2.70E-06	lb/ton	1.32E-03	1.13E-03	1.1E-05	lb/1,000 gal	9.8E-05	0.032	lb/trillion btu	2.66E-04							1.32E-03	5.8E-03
Phenol	1.60E-05	lb/ton	7.81E-03	6.67E-03				6.1	lb/trillion btu	5.06E-02							5.06E-02	2.2E-01
Propionaldehyde	3.80E-04	lb/ton	1.85E-01	1.58E-01				10.35	lb/trillion btu	8.59E-02							1.85E-01	8.1E-01
Pyrene	3.30E-07	lb/ton	1.61E-04	1.38E-04	4.3E-06	lb/1,000 gal	3.9E-05	0.012	lb/trillion btu	9.96E-05							1.61E-04	7.1E-04
Styrene	2.50E-05	lb/ton	1.22E-02	1.04E-02				3.1	lb/trillion btu	2.57E-02							2.57E-02	1.1E-01
Tetrachloroethylene	4.30E-05	lb/ton	2.10E-02	1.79E-02				3.1	lb/trillion btu	2.57E-02							2.57E-02	1.1E-01
Toluene	2.40E-04	lb/ton	1.17E-01	1.00E-01	6.20E-03	lb/1,000 gal	5.8E-02	3.6	lb/trillion btu	2.99E-02							1.17E-01	5.1E-01
1,1,1-Trichloroethane	2.00E-05	lb/ton	9.76E-03	8.34E-03	2.36E-04	lb/1,000 gal	2.2E-03										9.76E-03	4.3E-02
1,1,2-Trichloroethane			-	-				4.7	lb/trillion btu	3.90E-02							3.90E-02	1.7E-01
Trichloroethylene			-	-				3.1	lb/trillion btu	2.57E-02							2.57E-02	1.1E-01
Vinyl acetate	7.60E-06	lb/ton	3.71E-03	3.17E-03				0.42	lb/trillion btu	3.49E-03							3.71E-03	1.6E-02

Completed by: PBS 11/26/08
Checked by: SAK 11/26/08

Table A-7: Toxic Emission Calculations: Main Boiler

Basis:

PRB Coal Consumption Rate	488	ton Coal/hr
50-50 Blend Coal Consumption rate	417	ton Coal/hr
Fuel Oil Consumption Rate	9286	gal/hr
Maximum heat Input	8.30E-03	Trillion Btu/hr

Compound	Pulverized Coal [1] -AP-42				Fuel Oil [2]-AP-42			Pulverized Coal [3]-Utility report to Congress, NEI Database, TRI Database			Pulverized Coal [4] -MACT Analysis						Worst Case Emissions (lb/hr)	Worst Case Emissions (tpy)[5]
	Emission Factor	Units	Hourly Emissions (lb/hr) (PRB Coal)	Hourly Emissions (lb/hr) 50-50 Blend	Emission Factor	Units	Hourly Emissions (lb/hr)	Emission Factor	Units	Hourly Emissions (lb/hr)	Emission Factor (PRB Coal)	Units	Hourly Emissions (lb/hr) (PRB Coal)	Emission Factor (50-50 Blend Coal)	Units	Hourly Emissions (lb/hr) 50-50 Blend		
Xylene	3.70E-05	lb/ton	1.81E-02	1.54E-02	1.09E-04	lb/1,000 gal	1.0E-03	4.65	lb/trillion btu	3.86E-02							3.86E-02	1.7E-01
m-xylene	-	-	-	-	-	-	-	1.45	lb/trillion btu	1.20E-02							1.20E-02	5.3E-02
o-xylene	-	-	-	-	1.09E-04	lb/1,000 gal	1.0E-03	0.81	lb/trillion btu	6.72E-03							6.72E-03	2.9E-02
p-xylene	-	-	-	-	-	-	-	1.45	lb/trillion btu	1.20E-02							1.20E-02	5.3E-02
Dioxins (Total)	-	-	-	-	-	-	-	9.68E-06	lb/trillion btu	8.03E-08							8.03E-08	3.5E-07
P-Cresol	-	-	-	-	-	-	-	0.95	lb/trillion btu	7.89E-03							7.89E-03	3.5E-02
Pentachlorophenol	-	-	-	-	-	-	-	0.008	lb/trillion btu	6.64E-05							6.64E-05	2.9E-04
Hexachlorobenzene	-	-	-	-	-	-	-	0.08	lb/trillion btu	6.64E-04							6.64E-04	2.9E-03
Methyl chloroform	-	-	-	-	-	-	-	3.42	lb/trillion btu	2.84E-02							2.84E-02	1.2E-01
Methyl iodine	-	-	-	-	-	-	-	0.4	lb/trillion btu	3.32E-03							3.32E-03	1.5E-02
Methyl isobutyl ketone	-	-	-	-	-	-	-	4.9	lb/trillion btu	4.07E-02							4.07E-02	1.8E-01
1,2,4-Trichlorobenzene	-	-	-	-	-	-	-	1.51E-06	lb/MMBtu	1.25E-02							1.25E-02	5.5E-02
1,3-Butadiene	-	-	-	-	-	-	-	3.71E-07	lb/MMBtu	3.08E-03							3.08E-03	1.3E-02
1,3-Dichloropropene	-	-	-	-	-	-	-	6.61E-07	lb/MMBtu	5.48E-03							5.48E-03	2.4E-02
1,4-Dichlorobenzene	-	-	-	-	-	-	-	1.06E-06	lb/MMBtu	8.76E-03							8.76E-03	3.8E-02
2,4,6-Trichlorophenol	-	-	-	-	-	-	-	8.01E-10	lb/MMBtu	6.64E-06							6.64E-06	2.9E-05
2,4-Dinitrophenol	-	-	-	-	-	-	-	1.08E-08	lb/MMBtu	8.92E-05							8.92E-05	3.9E-04
3-Methylcholanthrene	-	-	-	-	-	-	-	6.62E-11	lb/MMBtu	5.49E-07							5.49E-07	2.4E-06
4-Nitrophenol	-	-	-	-	-	-	-	4.00E-09	lb/MMBtu	3.32E-05							3.32E-05	1.5E-04
7,12-Dimethylbenz[a]Anthracene	-	-	-	-	-	-	-	5.88E-10	lb/MMBtu	4.88E-06							4.88E-06	2.1E-05
Allyl Chloride	-	-	-	-	-	-	-	8.03E-06	lb/MMBtu	6.66E-02							6.66E-02	2.9E-01
Arsenic Trioxide	-	-	-	-	-	-	-	2.98E-05	lb/MMBtu	2.47E-01							2.47E-01	1.1E+00
Cadmium Oxide	-	-	-	-	-	-	-	3.20E-06	lb/MMBtu	2.66E-02							2.66E-02	1.2E-01
Calcium Cyanamide	-	-	-	-	-	-	-	3.39E-06	lb/MMBtu	2.81E-02							2.81E-02	1.2E-01
Chromic Acid (VI)	-	-	-	-	-	-	-	8.32E-06	lb/MMBtu	6.91E-02							6.91E-02	3.0E-01
Chromic Oxide	-	-	-	-	-	-	-	2.44E-05	lb/MMBtu	2.02E-01							2.02E-01	8.9E-01
Dibenzo[a,j]Acridine	-	-	-	-	-	-	-	5.12E-07	lb/MMBtu	4.25E-03							4.25E-03	1.9E-02
Dibenzofuran	-	-	-	-	-	-	-	5.73E-07	lb/MMBtu	4.75E-03							4.75E-03	2.1E-02
Diethyl Sulfate	-	-	-	-	-	-	-	2.33E-06	lb/MMBtu	1.94E-02							1.94E-02	8.5E-02
Dimethyl Phthalate	-	-	-	-	-	-	-	9.64E-08	lb/MMBtu	8.00E-04							8.00E-04	3.5E-03
Manganese Dioxide	-	-	-	-	-	-	-	4.26E-05	lb/MMBtu	3.54E-01							3.54E-01	1.5E+00
Polychlorinated Biphenyls	-	-	-	-	-	-	-	1.37E-08	lb/MMBtu	1.14E-04							1.14E-04	5.0E-04
Polycyclic Organic Matter	-	-	-	-	-	-	-	6.21E-06	lb/MMBtu	5.16E-02							5.16E-02	2.3E-01
Propylene Dichloride	-	-	-	-	-	-	-	1.20E-06	lb/MMBtu	9.97E-03							9.97E-03	4.4E-02
Sodium Cyanide	-	-	-	-	-	-	-	8.09E-05	lb/MMBtu	6.71E-01							6.71E-01	2.9E+00
Toluene-2,4-Diamine	-	-	-	-	-	-	-	1.38E-08	lb/MMBtu	1.14E-04							1.14E-04	5.0E-04
Vinyl Chloride	-	-	-	-	-	-	-	7.14E-07	lb/MMBtu	5.92E-03							5.92E-03	2.6E-02
Metals																		
Antimony	1.80E-05	lb/ton	8.78E-03	7.51E-03				0.87	lb/trillion btu	7.25E-03	1.71E-06	lb/MMBtu	1.42E-02	1.75E-06	lb/MMBtu	1.46E-02	1.46E-02	6.4E-02
Arsenic	4.10E-04	lb/ton	2.00E-01	1.71E-01	5.6E-04	lb/1,000 gal	5.2E-03	6.21	lb/trillion btu	5.16E-02	3.77E-05	lb/MMBtu	3.13E-01	2.71E-05	lb/MMBtu	2.25E-01	3.13E-01	1.4E+00
Beryllium	2.10E-05	lb/ton	1.02E-02	8.76E-03	4.2E-04	lb/1,000 gal	3.9E-03	0.72	lb/trillion btu	5.99E-03	2.11E-06	lb/MMBtu	1.75E-02	3.43E-06	lb/MMBtu	2.85E-02	2.85E-02	1.2E-01
Cadmium	5.10E-05	lb/ton	2.49E-02	2.13E-02	4.2E-04	lb/1,000 gal	3.9E-03	0.34	lb/trillion btu	2.79E-03	3.53E-07	lb/MMBtu	2.93E-03	6.45E-06	lb/MMBtu	5.35E-02	5.35E-02	2.3E-01
Chromium, total	2.60E-04	lb/ton	1.27E-01	1.08E-01	4.2E-04	lb/1,000 gal	3.9E-03	7.69	lb/trillion btu	6.38E-02	1.53E-05	lb/MMBtu	1.27E-01	1.89E-05	lb/MMBtu	1.57E-01	1.57E-01	6.9E-01
Chromium, hexavalent	7.90E-05	lb/ton	3.86E-02	3.29E-02													3.86E-02	1.7E-01
Cobalt	1.00E-04	lb/ton	4.88E-02	4.17E-02				2.38	lb/trillion btu	1.98E-02	4.86E-06	lb/MMBtu	4.04E-02	4.62E-06	lb/MMBtu	3.83E-02	4.88E-02	2.1E-01
Copper			-	-	8.4E-04	lb/1,000 gal	7.8E-03										7.80E-03	
Lead	4.20E-04	lb/ton	2.05E-01	1.75E-01	1.3E-03	lb/1,000 gal	1.2E-02	7.64	lb/trillion btu	6.34E-02	1.01E-05	lb/MMBtu	8.38E-02	1.60E-05	lb/MMBtu	1.33E-01	1.33E-01	5.8E-01
Mercury	8.30E-05	lb/ton	4.05E-02	3.46E-02	4.2E-04	lb/1,000 gal	3.9E-03	5.26	lb/trillion btu	4.36E-02	1.68E-06	lb/MMBtu	1.39E-02				1.39E-02	6.E-02
Magnesium	1.10E-02	lb/ton	5.37E+00	4.59E+00													5.37E+00	
Manganese	4.90E-04	lb/ton	2.39E-01	2.04E-01	8.4E-04	lb/1,000 gal	7.8E-03	19.27	lb/trillion btu	1.60E-01	1.13E-04	lb/MMBtu	9.35E-01	9.70E-05	lb/MMBtu	8.05E-01	9.35E-01	4.1E+00
Nickel	2.80E-04	lb/ton	1.37E-01	1.17E-01	4.2E-04	lb/1,000 gal		6.04	lb/trillion btu	5.01E-02	1.46E-05	lb/MMBtu	1.21E-01	1.98E-05	lb/MMBtu	1.64E-01	1.64E-01	7.2E-01
Phosphorus			-	-				31.50	lb/trillion btu	2.61E-01							2.61E-01	1.1E+00
Selenium	1.30E-03	lb/ton	6.34E-01	5.42E-01	2.1E-03	lb/1,000 gal	2.0E-02	18.76	lb/trillion btu	1.56E-01	2.15E-06	lb/MMBtu	1.79E-02	2.65E-06	lb/MMBtu	2.20E-02	6.34E-01	2.8E+00
Zinc			-		5.6E-04	lb/1,000 gal	5.2E-03										5.20E-03	

1)AP-42 Table 1.1-13, 1.1-14, & 1.1-18

2)AP-42 Tables 1.3-9 & 1.3-10

3) Test Report Data Table A-1 and A-4 from the study of Hazardous Air Pollutant emissions from Electric Utility Steam Generating Units- Final report to Congress (1998) and Data derived from EPA NEI HAP emissions inventory data - 2002 NEI V3 last updated September 2007 and 2006 TRI Database

4) MACT Analysis HAP Emissions rate data derived from USGS COALQUAL Data as indicated in Sections 17, 18, and 19 of calculations.

5) Worst case ton/yr emissions indicated for HAPs. Emissions indicated worst case value of emission estimate resources reviewed with four exceptions. Value indicated for HF, HCl, mercury, and lead representative of emission limits proposed for Plant Washington.

Completed by: PBS 11/26/08
Checked by: SAK 11/26/08

Table A-8: Toxic Emission Calculations: Auxiliary Boiler

Basis:

Fuel Oil Consumption	1,714	gal/hr
Auxiliary Boiler Capacity	240	MMBtu/hr
Annual Operating Hours	876	hrs/yr

Compound	Fuel Oil [1]			
	Emission Factor	Units	Hourly Emissions (lb/hr)	Total Emissions (tpy)2
Organics				
Acenaphthene	2.1E-05	lb/1,000 gal	3.62E-05	1.58E-05
Acenaphthylene	2.5E-07	lb/1,000 gal	4.34E-07	1.90E-07
Anthracene	1.2E-06	lb/1,000 gal	2.09E-06	9.16E-07
Benzene	2.14E-04	lb/1,000 gal	3.67E-04	1.61E-04
Benzo(a)anthracene	4.0E-06	lb/1,000 gal	6.87E-06	3.01E-06
Benzo(g,h,i)perylene	2.26E-06	lb/1,000 gal	3.87E-06	1.70E-06
Benzo(b,k)fluoranthene	1.48E-06	lb/1,000 gal	2.54E-06	1.11E-06
Chrysene	2.4E-06	lb/1,000 gal	4.08E-06	1.79E-06
Dibenzo(a,h)anthracene	1.7E-06	lb/1,000 gal	2.86E-06	1.25E-06
Ethylbenzene	6.36E-05	lb/1,000 gal	1.09E-04	4.78E-05
Fluoranthene	4.8E-06	lb/1,000 gal	8.30E-06	3.63E-06
Fluorene	4.5E-06	lb/1,000 gal	7.66E-06	3.36E-06
Formaldehyde	3.3E-02	lb/1,000 gal	5.66E-02	2.48E-02
Indeno(1,2,3,c,d)pyrene	2.1E-06	lb/1,000 gal	3.67E-06	1.61E-06
Naphthalene	1.13E-03	lb/1,000 gal	1.94E-03	8.48E-04
Phenanthrene	1.1E-05	lb/1,000 gal	1.80E-05	7.88E-06
Pyrene	4.3E-06	lb/1,000 gal	7.29E-06	3.19E-06
Toluene	6.20E-03	lb/1,000 gal	1.06E-02	4.66E-03
1,1,1-Trichloroethane	2.36E-04	lb/1,000 gal	4.05E-04	1.77E-04
Xylene	1.90E-04	lb/1,000 gal	3.26E-04	1.43E-04
Hydrogen fluoride	9.31E-06	lb/MMBtu	2.23E-03	9.79E-04
Phosphorous	1.12E+02	lb/TBtu	2.68E-02	1.18E-02
Acetaldehyde	8.20E+00	lb/TBtu	1.97E-03	8.62E-04
Methyl Chloroform	7.60E+00	lb/TBtu	1.82E-03	7.99E-04
Methylene chloride	3.23E+01	lb/TBtu	7.74E-03	3.39E-03
Phenol	2.43E+01	lb/TBtu	5.83E-03	2.55E-03
Tetrachloroethylene	5.50E-01	lb/TBtu	1.32E-04	5.78E-05
Vinyl acetate	5.15E+00	lb/TBtu	1.24E-03	5.41E-04
Dioxins (Total)	8.80E-06	lb/TBtu	2.11E-09	9.25E-10
2-Methylnaphthalene	1.70E-02	lb/TBtu	4.08E-06	1.79E-06
Metals				
Arsenic	5.6E-04	lb/1,000 gal	9.60E-04	4.20E-04
Beryllium	4.2E-04	lb/1,000 gal	7.20E-04	3.15E-04
Cadmium	4.2E-04	lb/1,000 gal	7.20E-04	3.15E-04
Chromium, total	4.2E-04	lb/1,000 gal	7.20E-04	3.15E-04
Copper	8.4E-04	lb/1,000 gal	1.44E-03	
Lead	1.3E-03	lb/1,000 gal	2.16E-03	9.46E-04
Mercury	4.2E-04	lb/1,000 gal	7.20E-04	3.15E-04
Manganese	8.4E-04	lb/1,000 gal	1.44E-03	6.31E-04
Nickel	4.2E-04	lb/1,000 gal	7.20E-04	3.15E-04
Selenium	2.1E-03	lb/1,000 gal	3.60E-03	1.58E-03
Zinc	5.6E-04	lb/1,000 gal	9.60E-04	4.20E-04

Notes:

1) AP-42 Table 1.3-9 and 1.3-10 and USEPA Utility Report To Congress

2) Total ton/yr emissions indicated for HAPs

Completed by: PBS 11/26/08

Checked by: SAK 11/26/08

TANKS 4.0.9

Emissions Report - Summary Format

Tank Indentification and Physical Characteristics

Identification

User Identification:	TNK1
City:	Sandersville
State:	Georgia
Company:	Plant Washington
Type of Tank:	Vertical Fixed Roof Tank
Description:	No.2 Fuel Oil Storage Tank-350,000 gal

Tank Dimensions

Shell Height (ft):	45.00
Diameter (ft):	40.00
Liquid Height (ft) :	37.23
Avg. Liquid Height (ft):	37.23
Volume (gallons):	349,974.25
Turnovers:	10.00
Net Throughput(gal/yr):	3,499,742.54
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Macon, Georgia (Avg Atmospheric Pressure = 14.57 psia)

TANKS 4.0.9
Emissions Report - Summary Format
Liquid Contents of Storage Tank

TNK1 - Vertical Fixed Roof Tank
Sandersville, Georgia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	66.31	60.27	72.35	64.36	0.0081	0.0066	0.0097	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009

TANKS 4.0.9
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

TNK1 - Vertical Fixed Roof Tank
Sandersville, Georgia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	87.49	29.26	116.75

TANKS 4.0.9

Emissions Report - Summary Format

Tank Indentification and Physical Characteristics

Identification

User Identification:	TNK2
City:	Sandersville
State:	Georgia
Company:	Plant Washington
Type of Tank:	Vertical Fixed Roof Tank
Description:	Emergency General Fuel Storage Tank-750 gal

Tank Dimensions

Shell Height (ft):		7.00
Diameter (ft):		4.50
Liquid Height (ft) :		6.00
Avg. Liquid Height (ft):		5.00
Volume (gallons):		713.84
Turnovers:		1.00
Net Throughput(gal/yr):		713.84
Is Tank Heated (y/n):	N	

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone	
Height (ft)		0.00
Slope (ft/ft) (Cone Roof)		0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Macon, Georgia (Avg Atmospheric Pressure = 14.57 psia)

TANKS 4.0.

Emissions Report - Summary Format
Liquid Contents of Storage Tank

TNK2 - Vertical Fixed Roof Tank
Sandersville, Georgia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	66.31	60.27	72.35	64.36	0.0081	0.0066	0.0097	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009

TANKS 4.0.9
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

TNK2 - Vertical Fixed Roof Tank
Sandersville, Georgia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.02	0.09	0.11

TANKS 4.0.9

Emissions Report - Summary Format

Tank Indentification and Physical Characteristics

Identification

User Identification:	TNK3
City:	Sandersville
State:	Georgia
Company:	Plant Washington
Type of Tank:	Horizontal Tank
Description:	Fire Water Pump Fuel Storage Tank-250 gal

Tank Dimensions

Shell Length (ft):		5.00
Diameter (ft):		3.00
Volume (gallons):		250.00
Turnovers:		1.00
Net Throughput(gal/yr):		250.00
Is Tank Heated (y/n):	N	
Is Tank Underground (y/n):	N	

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Macon, Georgia (Avg Atmospheric Pressure = 14.57 psia)

TANKS 4.0.9
Emissions Report - Summary Format
Liquid Contents of Storage Tank

TNK3 - Horizontal Tank
Sandersville, Georgia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	66.31	60.27	72.35	64.36	0.0081	0.0066	0.0097	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009

TANKS 4.0.9
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

TNK3 - Horizontal Tank
Sandersville, Georgia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.01	0.06	0.07

Exhibit 2

217/782-2113

CONSTRUCTION PERMIT - PSD APPROVAL
NSPS EMISSION UNITS

PERMITTEE

City of Springfield
Attn: S. David Farris, CIH, CSP
Environmental Health and Safety Manager
Municipal Center Complex
800 Monroe Street
Springfield, Illinois 62757

Application No.: 04110050 I.D. No.: 167120AAO
Applicant's Designation: BLR4 Date Received: November 18, 2004
Subject: Dallman Unit 4
Date Issued: August 10, 2006
Location: City Water Light & Power (CWLP), 3100 Stevenson Drive, Springfield

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission sources and air pollution control equipment consisting of the Dallman Unit 4 project, including a pulverized coal fired boiler with low NO_x combustion technology, selective catalytic reduction system, scrubber, fabric filter and wet electrostatic precipitator, associated material handling equipment, cooling tower and ancillary equipment, as described in the above referenced application. This Permit is granted based upon and subject to the findings and conditions that follow.

In conjunction with this permit, approval is given with respect to the federal regulations for Prevention of Significant Deterioration of Air Quality (PSD) for this project, as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 7401 et seq., the federal regulations promulgated thereunder at 40 CFR 52.21 for Prevention of Significant Deterioration of Air Quality (PSD), and a Delegation of Authority agreement between the United States Environmental Protection Agency (USEPA) and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with provisions of 40 CFR 124.19. This approval is based upon the findings that follow. This approval is subject to the following conditions. This approval is also subject to the general requirement that the project be developed and operated consistent with the specifications and data included in the application and any significant departure from the terms expressed in the application, if not otherwise authorized by this permit, must receive prior written authorization from the Illinois EPA.

If you have any questions on this permit, please call Shashi Shah at 217/782-2113 (TDD 217/782-9143).

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:SRS:psj

cc: Region 2
USEPA Region V

TABLE OF CONTENTS

INTRODUCTION: FINDINGS

1a. City Water, Light and Power (CWLP) has requested a permit to construct a new solid fuel fired generating unit, Dallman Unit 4, which would replace two existing coal-fired units, Lakeside Units 7 and 8, at its existing power plant in Springfield. The new boiler would be equipped with low-NO_x combustion technology and selective catalytic reduction (SCR), a fabric filter or "baghouse", wet flue gas desulfurization (WFGD) or "scrubber", and a wet electrostatic precipitator (WESP). Other new emission units associated with the new boiler would include: equipment for handling coal, limestone, ash and gypsum associated with the new boiler; a cooling tower; and other ancillary equipment and operations.

b. The new boiler would have a maximum rated capacity of about 2,440 million Btu/hour and would serve a new steam turbine-generator with a maximum nominal capacity of 250 MW, gross output. The boiler would be fired on coal as its primary fuel, with natural gas used as the startup fuel. The design coal supply for the boiler has 3.55 percent sulfur by weight and 10,200 Btu per pound as received at the plant, for an equivalent nominal sulfur dioxide emission rate of 7.0 lb/million Btu.

2. The CWLP power plant is located in Sangamon County, an area that is currently designated attainment for all criteria pollutants.

3a. This project is subject to PSD for emissions of particulate matter (PM), carbon monoxide (CO), and sulfuric acid mist because the project's potential emissions of these pollutants are greater than the applicable significant emission rates set by the PSD rules. In particular, the project is being permitted for annual emissions of 401 tons, 1,281 tons and 53 tons for PM, CO and sulfuric acid mist, respectively. (See also Attachment 1 and 2.)

b. The project is not subject to PSD for emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) because the net increases in emissions of these pollutants are below the applicable significant emission rates set by the PSD rules. For these pollutants, CWLP has submitted a netting demonstration that addresses the decreases in emissions from the shutdown of the existing Lakeside Units that would occur with this project, as summarized in Attachment 2, Table 2-B. This demonstration shows that while the potential annual emissions of SO_2 from the new boiler would be 2,135 tons, the project would be accompanied by a contemporaneous emissions decrease of 7,741 tons, so that this project would result in a net decrease in annual emissions of at least 5,605 tons. Similarly for NO_x, while the potential annual emissions of the new boiler are 1,070 tons, there will be an accompanying decrease in emissions of 1,262 tons, for a net decrease in annual emissions of at least 152 tons.

c. The proposed project is not subject to PSD for other PSD pollutants that have not been addressed above (VOC, lead, and fluorides) because the potential emissions of other PSD pollutants are below the applicable significant emission rates set by the PSD rules.

4a. After reviewing the materials submitted by CWLP, the Illinois EPA has determined that the project will: (i) comply with applicable Pollution Control Board (Board) emission standards, (ii) comply with applicable federal emission standards, (iii) utilize Best Available Control Technology (BACT) on emissions as required by PSD.

b. The BACT determinations made by the Illinois EPA for the PM, CO and sulfuric acid mist emissions from the project are the control technology determinations for these pollutants contained in the permit conditions for specific emission units. These BACT determinations reflect the Illinois EPA's judgment on the appropriate control technique(s) for each pollutant and the emission rates that should be considered achievable for such techniques, consistent with USEPA guidance and precedent on the establishment of BACT limits. These BACT determinations can only be revised by action under the PSD rules, not simply by future action in Clean Air Act Permit Program (CAAPP) Permits for the source.

5a. The air quality analysis submitted by CWLP and reviewed by the Illinois EPA shows that the proposed project will not cause a violation of the ambient air quality standards for CO and PM_{10}. The air quality analysis also demonstrated compliance with the applicable increments for PM_{10} established under the PSD rules.

b. CWLP has also submitted the additional impact analyses required under the PSD rules, including an analysis of growth that will occur due to the project, an analysis of soil and vegetation air pollution impacts from the project, and visibility impairment analysis. These analyses adequately address the potential for any adverse impacts from the project.

6a. The new boiler is a major project for emissions of hazardous air pollutants (HAPs) because its potential annual emissions of hydrogen chloride are 76.5 tons. However, USEPA has determined that it is neither appropriate nor necessary to regulate utility steam generating units under Section 112 of the Clean Air Act, Air Quality and Emissions Standards for Hazardous Air Pollutants. In case this determination, which has been appealed by the State of Illinois and others, is overturned, this permit contains a case-by-case determination of MACT for the boiler, as would be required under Section 112(g) of the Clean Air Act.

b. New process and production units other than the new boiler that are part of this project are not subject to a case-by-cased determination of MACT under Section 112(g) of the Clean Air Act, because this project is a modification to an existing source for purposes of 40 CFR 63, Subpart B and the other new process and production units do not constitute major sources of HAPs when considered by themselves.

7. The Illinois EPA has determined that the proposed project complies with all applicable Board Air Pollution Control Regulations; the federal rules for PSD, 40 CFR 52.21; and applicable federal New Source Performance Standards (NSPS), 40 CFR 60. The boiler would also comply

with MACT under Section 112 of the Clean Air Act and applicable federal regulations thereunder, National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63, Subpart B.

8. A copy of the application, the project summary prepared by the Illinois EPA, and a draft of this permit were placed in a nearby public repository, and the public was given notice and an opportunity to examine this material and to participate in a public hearing and to submit comments on these matters.

9. This permit also includes requirements for proposed Dallman Unit 4, the existing generating units operated by the Permittee at its Springfield power plant, and the Permittee that have their origin in an agreement between the Permittee and the Sierra Club. (See Condition 1.6.) The Permittee initiated discussions with the Sierra Club and voluntarily entered into this agreement with the objective of avoiding an appeal of this permit, which would act to delay the effectiveness of the permit. These additional requirements would only take effect if this objective is achieved, i.e., the issuance of the permit is not appealed. These requirements go beyond applicable regulatory requirements and address matters that the Illinois EPA would not normally be able to address during permitting. However, these additional requirements are reasonably related to the emissions and the air quality and environmental impacts of the proposed project and the Permittee's activities and may be appropriately included in this permit. In this regard, these requirements are similar to the ambitious commitments and stringent restrictions at times voluntary accepted by sources for certain proposed projects to keep the projects from being major, with the objective of avoiding the substantive and procedural requirements for permitting of a major project.

INTRODUCTION: IDENTIFICATION OF SIGNIFICANT EMISSIONS UNITS

Unit Number	Description	Emission Control Measures
1	Dallman Unit 4 – Pulverized Coal Boiler	Good Combustion Practices, Low NO_x Burners, Selective Catalytic Reduction, Fabric Filter (Baghouse), Wet Flue Gas Desulfurization (Scrubber), and Wet Electrostatic Precipitator
2	Bulk Material Handling Operations	Various Control Measures (application of water or dust suppressant, enclosures, compaction, and add-on control equipment)
3	Cooling Tower	High-Efficiency Drift Eliminators
4	Roadways and Other Sources of Fugitive Dust	Paving and Dust Control Measures (application of water or other dust suppressants and sweeping or vacuuming to collect dust)

SECTION 1: SOURCE-WIDE PERMIT CONDITIONS

CONDITION 1.1: EFFECT OF PERMIT

a. This permit does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois' State Implementation Plan, as well as all other applicable federal, state and local requirements.

b. In particular, this permit does not relieve the Permittee from the responsibility to carry out practices during the construction and operation of the project, such as application of water or dust suppressant sprays to unpaved traffic areas, as necessary to minimize fugitive dust and prevent an air pollution nuisance from fugitive dust, as prohibited by 35 IAC 201.141.

CONDITION 1.2: VALIDITY OF PERMIT AND COMMENCEMENT OF CONSTRUCTION

a. As provided by 40 CFR 52.21(r)(2), this permit shall become invalid if construction is not commenced within 18 months of the PSD approval becoming effective, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable period of time. The Illinois EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This condition supersedes Standard Condition 1 of the permit. (See Attachment 3)

b. For purposes of the above provisions, the definitions of "construction" and "commence" at 40 CFR 52.21(b) (8) and (9) shall apply, which requires that a source must enter into a binding agreement for on-site construction or begin actual on-site construction. (See also the definition of "begin actual construction," 40 CFR 52.21(b) (11)).

CONDITION 1.3: ANCILLARY EQUIPMENT, INCLUDING THE TWO DIESEL ENGINES

a. Ancillary equipment, including the two diesel engines, shall be operated in accordance with good air pollution control practices to minimize emissions.

b. i. The diesel engines shall be used as emergency engines, as defined at 35 IAC 211.1920.

ii. The power output of each diesel engine shall be no more than 1,500 horsepower, as necessary to qualify as an emergency or standby unit as defined by 35 IAC 211.1920.

iii. Operation of each diesel engine shall not exceed 200 hours per year.

iv. The fuel fired in the diesel engines shall be ultra-low sulfur (ULS) diesel fuel or other alternative ultra-low sulfur fuel oil containing no more than 15 ppm sulfur (e.g., bio-diesel).

Note: These requirements for the fuel fired in the engines constitute the determination of Best Available Control Technology (BACT) for the engines, as required under the PSD rules.

CONDITION 1.4: AUTHORIZATION TO OPERATE EMISSION UNITS

a. i. Under this permit, the affected boiler (Dallman 4 boiler) may be operated for a period that ends 180 days after the boiler first sends electricity to the grid to allow for equipment shakedown and required emissions testing. This period may be extended by Illinois EPA upon request of the Permittee if additional time is needed to complete shakedown or perform emission testing. This condition supersedes Standard Condition 6. (See Attachment 3)

ii. Upon successful completion of emission testing of the affected boiler demonstrating compliance with applicable limitations, the Permittee may continue to operate the boiler as allowed by Section 39.5(5) of the Environmental Protection Act.

b. i. The remainder of the project equipment, excluding the affected boiler, may be operated under this construction permit for a period of 365 days after initial startup of the affected boiler. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties experienced during shakedown of the plant. This condition supersedes Standard Condition 6. (See Attachment 2)

ii. Upon successful completion of emission testing of the affected boiler demonstrating compliance with applicable limitations, the Permittee may continue to operate the remainder of the plant as allowed by Section 39.5(5) of the Environmental Protection Act.

c. For the affected boiler and other new emission units that are part of this project that are subject to federal New Source Performance Standards (NSPS), the Permittee shall fulfill applicable notification requirements of the NSPS, 40 CFR 60.7(a), including:

i. Written notification of commencement of construction no later than 30 days after such date (40 CFR 60.7(a)(1)); and

ii. Written notification of the actual date of initial startup within 15 days after such date (40 CFR 60.7(a)(3)).

CONDITION 1.5: REQUIREMENTS FOR EXISTING UNITS

a. This permit is issued based on the reduced operation and eventual shutdown of the existing Lakeside Units at the plant (Lakeside Units 7 and 8) in conjunction with the operation of the affected boiler, as follows:

i. Extended Shakedown Period

If the Illinois EPA extends the shakedown period for the affected boiler as provided by Condition 1.4(a) beginning at the start of any such extended shakedown period, and continuing until the permanent shutdown of the Lakeside Units, the quarterly emissions from the affected boiler and the Lakeside Units shall not exceed 300 and 1,900 tons of NO_x and SO_2, respectively.

ii. Transition Period

Following the end of the shakedown period, the Lakeside Units shall only operate on a limited basis during a 12-month transition period for the affected boiler. For this purpose, the Lakeside Units shall only be operated when the affected boiler is out of service for an extended outage, i.e., an outage of greater duration that those typically associated with the normal maintenance of a coal-fired boiler at a power plant and the extended outage is required to make repairs or enhancement to the boiler to facilitate compliance or fulfillment of operational requisites. In addition, the Permittee shall notify the Illinois EPA prior to operating the Lakeside Units during the transition, explaining the reason that such operation will be needed and expected duration.

Note: This permit does not relax any requirements for existing Lakeside Units during the shakedown or transition periods for the affected boiler.

iii. Permanent Shutdown

By the end of the transition period, the Permittee shall permanently shutdown the Lakeside Units.

Note: These requirements are imposed on the existing Lakeside Units because the Permittee has relied upon a contemporaneous decrease in emissions, from the shutdown of the Lakeside Units, to demonstrate that this project is not a major modification for emissions of SO_2 or NO_x under the federal PSD rules, 40 CFR 52.21. As a practical matter, it is expected by both the Illinois EPA and the Permittee that the Lakeside Units will no longer be operated when the affected boiler initially starts operation or shortly thereafter. Nevertheless, the permit contains provisions for an extended shakedown and transition period for the affected boiler as a contingency measure, to accommodate possible circumstances that would act to delay the orderly shakedown of the affected boiler, such as the need for major rework to the reboiler or repairs to the steam turbine generator.

b. Lakeside Units 7 and 8 are authorized by this permit to comply with requirements for NO_x emissions in 35 IAC Part 217, Subpart V, by means of participation in averaging plans that also includes other existing electrical generating unit(s) operated by the Permittee. This

authorization is subject to the conditions for the Permittee's existing generating units in the CAAPP Permit issued to the source (CAAPP Permit 95090091, issued September 29, 2005) that relate to 35 IAC Part 217, Subpart V, i.e., Conditions 7.1.4(f), 7.1.8(c), 7.1.9(e), and 7.1.10-2(e) and (f) of CAAPP Permit 95090091, which are incorporated into this permit by reference. This authorization shall terminate on December 31st of the calendar year in which the Lakeside units are permanently shut down or on the date that the conditions in CAAPP Permit 95090091 that authorize participation in an averaging plans become effective, whichever occurs first.

c. During each ozone control period, beginning in the control period in which the Permittee initially starts up the affected boiler, the emissions of NO_x from existing Dallman Units 1, 2 and 3, as a group, shall not exceed 0.175 lb/million Btu, average for the control period. Compliance with this limit shall be determined and demonstrated using the applicable procedures specified in 35 IAC Part 217, Subpart V.

CONDITION 1.6: ADDITIONAL REQUIREMENTS

a. The Permittee shall comply with the applicable requirements and emission limits in Attachment 1, Table 1-C and in Attachment 5 (including Attachments 5.1 through 5.6), subject to the accompanying terms therein, except as provided by Condition 1.6(c) below.

b. The affected boiler is subject to and shall comply with the applicable emission limitations in Table 1-C, subject to the accompanying terms therein, except as provided by Condition 1.6(c) below.

c. If the issuance of this permit is appealed pursuant to federal law, under 40 CFR Part 124 or other federal regulations or provisions under the Clean Air Act, or is appealed pursuant to state law, under the Environmental Protection Act or other state law or regulations thereunder, or under common law, the above requirements, which were voluntarily accepted by the Permittee pursuant to an agreement with the Sierra Club with the objective of avoiding such an appeal, shall not be effective. In the event of such an appeal, these requirements would only become effective if and to the extent that the acceptance of the agreement is reaffirmed by the Permittee and the Sierra Club.

SECTION 2: UNIT-SPECIFIC CONDITIONS FOR PARTICULAR EMISSION UNIT

CONDITION 2.1: UNIT-SPECIFIC CONDITIONS FOR THE BOILER

2.1.1 Emission Unit Description

The affected unit for the purpose of these specific permit conditions is the new pulverized coal boiler (Dallman Unit 4) with associated pollution control train. The boiler would also have the capability to burn natural gas, which would be used for startup of the boiler.

2.1.2 Control Technology Determination

a. The affected boiler shall be operated and maintained with the following features to control emissions:

i. Good combustion practices.

ii. Low-NO_x burners.

iii. Selective catalytic reduction (SCR).

iv. Fabric Filter or "baghouse".

v. Wet flue gas desulfurization or "scrubber".

vi. Wet electrostatic precipitator (WESP).

b. The emissions from the affected boiler shall not exceed the following limits:

i. A. PM – 0.012 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing for PM (filterable) in accordance with Condition 2.1.8 and from equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(d).

B. PM Total – 0.035 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing for PM (filterable and condensable) in accordance with Condition 2.1.8 and from equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(d). A lower limit (as low as 0.018 lb/million Btu) may be set pursuant to Condition 2.1.15, which requires reevaluation of the above limit based upon actual PM_{10} emissions of the affected boiler.

ii. CO - 0.120 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.1.8 and from equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(d).

iii. Sulfuric Acid Mist – 0.0050 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.1.8 and from equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(d).

c. If emission standards for control of mercury and other hazardous air pollutants emitted from coal-fired utility boilers have not yet been adopted by USEPA pursuant to Section 112 of the Clean Air Act and the affected boiler must be subject to a case-by-case determination of MACT pursuant to Section 112(g) of the Clean Air Act (as would occur if USEPA's March 2005 determination for utility steam generating units pursuant to Section 112(n)(1) of the Clean Air Act is reversed or overturned), the affected boiler shall comply with the following standards for emissions of hazardous air pollutants pursuant to Section 112(g) of the Clean Air Act until such time as the boiler must comply with more stringent standards adopted by USEPA pursuant to Section 112(c) of the Clean Air Act:

i. A. The affected boiler shall comply with one of the following Compliance Alternatives for emissions of mercury:

I. An overall removal efficiency of 95 percent achieved without injection of activated carbon or other similar material specifically used to control emissions of mercury, comparing the emissions and the mercury contained in the coal supply (Alternative 1); or

II. Control by injection of powdered activated carbon or other material or a combination of materials specifically for control of mercury emissions to achieve the maximum practicable degree of mercury removal, as established in accordance with Attachment 4 (Alternative 2).

B. Compliance with these Alternatives shall be demonstrated as follows:

I. For Alternative 1, unless provisions are established in the source's CAAPP Permit for compliance to be demonstrated by use of

continuous emission monitoring, compliance shall be demonstrated by periodic testing and proper operation of the affected boiler consistent with other applicable requirements that relate to control of mercury (e.g., requirements applicable to PM and SO_2 emissions) as may be further developed, or revised in provisions for the boiler in the CAAPP Permit. For the purpose of determining the overall control efficiency for mercury, if the coal supply to the boiler is washed, the effect of coal washing shall be included, based upon a nominal value for the efficiency of coal washing for removal of mercury. For conventional coal cleaning, this value shall be 25 percent. For coal cleaning using advanced techniques, a higher value may be set by the Illinois EPA in a CAAPP permit, based upon a demonstration from the Permittee for the typical range of effectiveness of the cleaning process in removing mercury from the raw coal supply.

II. For Alternative 2, compliance shall be demonstrated by proper operation of the affected boiler and such other practices developed pursuant to Attachment 4 and the applicable State construction permit for the mercury control system.

C. These Alternatives shall take effect 9 months after initial startup of the affected boiler, provided however, the Permittee may, upon written notice to the Illinois EPA, extend this period for up to an additional 9 months if needed for detailed evaluation of mercury emissions from the affected boiler or physical changes to the boiler related to control of mercury emissions. As part of this notice, the Permittee shall explain why the necessary evaluation of emissions or physical changes to the affected boiler could not reasonably be completed earlier, identify the activities that it intends to perform to evaluate emissions or further enhance control for emissions, and specify the particular practices it will use during this period as good air pollution control practices to minimize emissions of mercury. Prior to these Alternatives taking effect, the Permittee shall use good air pollution control practices to minimize emissions of mercury.

Note: In conjunction with either Alternative, the Permittee must also conduct continuous emissions monitoring on a continuous or semi-continuous basis for the emissions

of mercury from the affected boiler. (Refer to Condition 2.1.9-2.)

ii. A. The affected boiler shall comply with one of the following Compliance Alternatives for emissions of hydrogen chloride:

I. An emission rate of 0.020 lb/million Btu, 3-hour average (Alternative 1); or

II. A removal efficiency of 97.5 percent, comparing the emissions and the chlorine content of the fuel supply, expressed as equivalent hydrogen chloride (Alternative 2).

B. Compliance with these Alternatives shall be demonstrated by periodic testing and proper operation of the boiler consistent with other applicable requirements that relate to control of SO_2 emissions, as may be further developed or revised in provisions for the boiler in the source's CAAPP Permit.

C. These Compliance Alternatives shall take effect 9 months after initial startup of the boiler. Prior to such date, the Permittee shall use good air pollution control practices to minimize emissions of hydrogen chloride.

iii. The affected boiler shall comply with an emission rate of 0.0036 lb/million Btu for emissions of VOM. This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.1.8 and from equipment operation.

iv. Notwithstanding the above, during periods of startup, shutdown and malfunction, as addressed by Condition 2.1.2(d), the above emission standards for mercury*, hydrogen chloride and VOM shall not apply. Emissions during such periods shall be addressed by the Startup, Shutdown and Malfunction Plan as provided by 40 CFR Part 63, Subpart A. (See also Condition 2.1.6(a)(ii).)

* If provisions are established in a CAAPP permit that allow compliance with the mercury standard to be determined with continuous emission monitoring with a compliance period longer than one month, mercury emissions during periods of startup, shutdown and malfunction shall be included in the determination of compliance.

d. The Permittee shall use good air pollution control practices to minimize emissions during startup, shutdown and malfunction of the affected boiler as further addressed in Condition 2.1.6, including the following:

i. Use of natural gas during startup to heat the affected boiler prior to initiating firing of coal;

ii. Operation of the affected boiler and associated air pollution control equipment in accordance with written operating procedures that include Startup, Shutdown and Malfunction Plan(s) (See also Condition 2.1.6(a).); and

iii. Inspection, maintenance and repair of the affected boiler and associated air pollution control equipment in accordance with written maintenance procedures.

Note: For CO, PM and sulfuric acid mist, for which the limits in Condition 2.1.2(b) do not apply during startup, shutdown and malfunction, the applicable numerical limits set by Condition 2.1.7(b) (Attachment A: Table I), which address emissions in lb/hour and which apply at all times, also serve as "secondary" numerical limits for purposes of BACT to address periods of startup, shutdown and malfunction, with compliance determined based on engineering analysis and calculations.

2.1.3 Applicable Federal Emission Standards

a. The affected boiler is subject to a New Source Performance Standard (NSPS) for Electric Utility Steam Generating Units, 40 CFR 60, Subpart Da and related requirements in 40 CFR 60, Subpart A, General Provisions.

i. The emissions and opacity from the affected boiler shall not exceed the applicable limits pursuant to the NSPS. In particular, the emissions from the boiler shall not exceed the following limits applicable to firing of solid fuel:

A. PM (as measured by USEPA Method 5) - 0.03 lb/million Btu heat input and 1 percent of potential combustion concentration when combusting solid fuel, pursuant to 40 CFR 60.42a(a). (Compliance with the PM emission limitation constitutes compliance with the percent reduction requirements, pursuant to 40 CFR 60.42a(1).)

B. Opacity - 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity, pursuant to 40 CFR 60.42a(b).

C. SO_2 - 1.20 lb/million Btu heat input and 10 percent of the potential combustion concentration (90 percent reduction) 30-day rolling average basis, pursuant to 40 CFR 60.43a(a)(1).

D. NO_x - 1.6 lb/MW-hr gross energy output, 30-day rolling average basis, pursuant to 40 CFR 60.44a(d).

E. Mercury - 0.000021 lb/gross MW-hr, 12-month rolling average basis, pursuant to 40 CFR 60.45a(1).

ii. A. Pursuant to 40 CFR 60.48a(a), (c) and (g), the above emission limits for opacity, PM, NO_x and mercury apply at all times, except during periods of startup, shutdown or malfunction as defined by 40 CFR 60.2.

B. Pursuant to 40 CFR 60.48a(g), the above emission limits for SO_2 apply at all times, except during periods of startup or shutdown, as defined by 40 CFR 60.2.

iii. At all times, the Permittee shall maintain and operate the affected boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, pursuant to 40 CFR 60.11(d).

2.1.4 Applicable State Emission Standards

The affected boiler is subject to the following state emission standards.

a. Opacity – 35 IAC 212.122 (20 percent opacity)

b. PM – 35 IAC 212.204 (0.1 lb/million Btu)*

c. SO_2 – 35 IAC 214.121 (1.2 lb/million Btu)*

d. CO – 35 IAC 216.121 (200 ppm, @ 50 % excess air)*

e. NO_x – (1) 35 IAC 217.121 (0.7 lb/million Btu), and (2) 35 IAC Part 217, Subpart V (0.25 lb/million Btu, as a seasonal average during each ozone control period, i.e., May through September)*

* This standard is not as stringent as the requirement in Condition 2.1.2 or 2.1.7.

Note: The Illinois Pollution Control Board is currently conducting a rulemaking proceeding on proposed state emission standards for mercury emissions from coal-fired generating units (In the matter of: Proposed New 35 Ill. Adm. Code 225, Control of Emissions from Large Combustion Sources (Mercury), R6-025).

2.1.5. Applicability of Other Regulatory Programs

a. The affected boiler is an affected unit under the Acid Rain Deposition Control Program pursuant to Title IV of the Clean Air Act. As an affected unit, the boiler is subject to an emission standard for NO_x and the Permittee must conduct emission monitoring for SO_2 and NO_x emissions and hold SO_2 allowances for the SO_2 emissions of the boiler during each year, as set forth in applicable regulations at 40 CFR Parts 72, 73 and 75.

b. i. The affected boiler qualifies as an Electrical Generating Unit (EGU) for purposes of 35 IAC Part 217, Subpart W, the NO_x Trading Program for Electrical Generating Units. As an EGU, the Permittee will have to hold NO_x allowances for the NO_x emissions of the boiler during each seasonal control period.

ii. The affected boiler also qualifies as an Electrical Generating Unit for purposes of the USEPA's Clean Air Interstate Rule (CAIR). When this program takes effect for Illinois, the Permittee will be subject to the requirements of this program, which include the obligation to hold both SO_2 and NO_x allowances for the requirements of this program that are applicable in Illinois.

c. The affected boiler shall comply with applicable requirements for control of mercury emissions from coal-fired utility boilers in Illinois if such requirements are imposed by USEPA on utility boilers in Illinois pursuant to the "Clean Air Mercury Rule," 40 CFR 60 Subpart HHHH.

2.1.6 Operating Requirements

a. The Permittee shall operate the affected boiler and associated air pollution control equipment in accordance with good air pollution control practices to minimize emissions, by operating in accordance with detailed written operating procedures as it is safe to do so. These procedures at a minimum shall:

i. Address startup, normal operation, shutdown and malfunction events.

ii. With respect to startup, shutdown and malfunction, the plan shall fulfill substantive requirements of 40 CFR 63.6(e) for a Startup, Shutdown and Malfunction Plan and be subject to procedural requirements for such plans as if the affected boiler was subject to 40 CFR Part 63, except that the Illinois EPA shall substitute for USEPA for purposes of administration. This plan shall include detailed provisions for review of relevant operating parameters of the affected boiler systems during startup, shutdown and malfunction as necessary to make adjustments and corrections to reduce or eliminate any excess emissions.

Note: If the affected boiler were to become subject to requirements of Section 112 of the Clean Air Act, such a plan would be applicable as a matter of rule and would be administered by both the USEPA and the Illinois EPA.

iii. Specifically with respect to startup, address readily foreseeable startup scenarios, including so called "hot startups" when the operation of the boiler is only temporarily interrupted, and provide for appropriate review

of the operational condition of the boiler prior to initiating startup of the boiler.

iv. A. With respect to malfunction, identify and address likely malfunction events with specific programs of corrective actions, and provide that upon occurrence of a malfunction that will result in emissions in excess of the applicable limits in Condition 2.1.2(b), 2.1.3 and 2.1.4, the Permittee shall, as soon as practicable, repair the affected equipment, reduce the operating rate of the boiler, remove the boiler from service or take other action so that excess emissions cease.

B. Consistent with the above, if the Permittee has maintained and operated the affected boiler and associated air pollution control equipment so that malfunctions are infrequent, sudden, not caused by poor maintenance or careless operation, and in general are not reasonably preventable, the Permittee shall begin shutdown of the boiler within 90 minutes, unless the malfunction is expected to be repaired within 120 minutes or such shutdown could threaten the stability of the regional electrical power supply. In such case, shutdown of the system shall be undertaken when it is apparent that repair will not be accomplished within 120 minutes or shutdown will not endanger the regional power system. In no case shall shutdown of the boiler be delayed solely for the economic benefit of the Permittee.

Note: If the Permittee determines that the continuous emission monitoring system (CEMS) is inaccurately reporting excess emissions, the boiler may continue to operate provided the Permittee records the information it is relying upon to conclude that the boiler and associated emission control systems are functioning properly and the CEMS is reporting inaccurate data and the Permittee takes prompt action to resolve the accuracy of the CEMS.

v. With respect to normal operation of the boiler, provide for formal comprehensive “tuning” of the boiler by qualified personnel for good combustion as part of initial startup and periodically thereafter, with subsequent operation and maintenance of the boiler directed at keeping the boiler in a tuned condition.

b. The Permittee shall maintain the affected boiler and associated air pollution control equipment in accordance with good air pollution control practices to assure proper functioning of equipment and minimize malfunctions, including maintaining the boiler in accordance with written procedures developed for this purpose.

c. The Permittee shall handle the fuel for the affected boiler in accordance with a written Fuel Management Plan that shall be designed to provide the boiler with a consistent fuel supply that meets relevant criteria needed for proper operation of the boiler and its control systems.

d. The Permittee shall review its operating and maintenance procedures and its Fuel Management Plan for the boiler as required above on a regular basis and revise them, if needed, consistent with good air pollution control practices based on actual operating experience and equipment performance. This review shall occur at least annually if not otherwise initiated by occurrence of a startup, shakedown, or malfunction event that is not adequately addressed by the existing plans or a specific request by the Illinois EPA for such review.

2.1.7 Emission Limitations

a. Emissions of SO_2 and NO_x from the affected boiler shall not exceed 0.20 and 0.10 lb/million Btu, respectively, on a rolling average of 30 boiler operating days. For this purpose, emissions shall be determined as the ratio of the mass of emissions and the heat input to the boiler during each period of 30 boiler operating days, with the mass of emissions determined from continuous emission monitoring, as required by Condition 2.1.9. These limitations shall take affect at the same time that the SO_2 and NO_x standards of the NSPS, 40 CFR 60 Da (Condition 2.1.3), which also apply on a 30-day rolling average, become effective.

b. Emissions from the affected boiler shall not exceed the limitations expressed in lb/hour in Attachment 1, Table 1-A. Compliance with these limitations shall be determined with testing or monitoring as required by Conditions 2.1.8 or 2.1.9, as follows, and proper equipment operation in accordance with Condition 2.1.6.

i. For emissions of SO_2 and NO_x, compliance is to be determined on a rolling average of 30 boiler operating days with continuous emission monitoring (see Condition 2.1.9).

ii. For other pollutants, compliance is to be determined on a 3-hour average basis, consistent with the duration of emission testing as addressed by Condition 2.1.8.

c. Annual emissions from the affected boiler shall not exceed the limitations in Attachment 1, Table 1-A. Compliance with these annual limitations shall be determined from a rolling total of monthly emission data, i.e., from the sum of emission data for a particular month and the preceding 11 months, for a total of 12 months of data.

Note: Condition 1.6 establishes limits for emissions of certain pollutants from the affected boiler that will be more stringent than the above limitations if and when such alternative limits take effect.

2.1.8 Emission Testing

a. i. A. Within 60 days after achieving the maximum production rate at which the affected boiler will be operated but not later than 180 days after initial startup of the affected boiler, the Permittee shall have tests conducted for opacity and emissions of NO_x, CO, PM (filterable and condensable), VOM, SO_2, hydrogen chloride, fluorides, sulfuric acid mist, and mercury and other metals, as follows, at its expense by an approved testing service while the boiler is operating at maximum operating load and other representative operating conditions. (In addition, the Permittee may also perform measurements to evaluate emissions at other load and operating conditions.)

B. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties in the startup and testing of the boiler, provided that initial performance testing required by the NSPS, 40 CFR Part 60, Subpart Da, has been completed for the boiler and the test report has been submitted to the Illinois EPA.

ii. Between 9 and 15 months after performance of the initial testing that demonstrates compliance with applicable requirements, the Permittee shall have the emissions of PM (filterable and condensable), VOM, hydrogen chloride, hydrogen fluoride, sulfuric acid mist, and mercury and other metals from the affected boiler retested in accordance with this condition.

iii. The Permittee shall conduct additional tests for PM emissions (filterable and condensable) and sulfuric acid mist emissions as needed for purposes of the evaluation of total PM emissions required by Condition 2.1.15.

iv. A. Thereafter, the Permittee shall also test PM emissions (filterable and condensable) from the affected boiler, as provided below, at a regular interval that is no greater than 30 months, except as follows. If the results of two of these PM tests for the boiler in series demonstrate filterable PM emissions that are 0.009 lb/million Btu or less, the maximum interval for PM testing of such boiler will be at least once every 48 months. However, if a PM test for such affected boiler then shows PM emissions

that are more than two thirds of an applicable limit, the maximum interval between testing shall revert to 30 months until two consecutive tests again show PM emissions that are two thirds or less than the applicable limits. For the purpose of these provisions, the two consecutive tests must be at least 24 months apart.

Note: The CAAPP Permit may establish requirements for more frequent emission testing.

B. Whenever PM testing for the boiler is performed as required above, testing for emissions of carbon monoxide (unless monitoring is conducted pursuant to Condition 2.1.9-3) hydrogen chloride and sulfuric acid mist shall also be performed, as provided below.

v. In addition to the emission testing required above, the Permittee shall perform emission tests as provided below as requested by the Illinois EPA for the boiler within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA. Among other reasons, such testing may be required if there is a significant increase in the mercury or chlorine content of the fuel supply to the boiler.

Note: Specific requirements for periodic emission testing may be established in provisions for the affected boiler in the CAAPP Permit for the source.

vi. Within two years of the initial startup of the affected boiler, the Permittee shall have emission testing conducted for dioxin/furan emissions as provided below.

b. The following methods and procedures shall be used for testing:

i. The following test methods shall be used unless use of other methods adopted by or being developed by USEPA is approved by the Illinois EPA.

Sampling Points	Method 1
Gas Flow/Velocity	Method 2
Flue Gas Weight	Method 3 or 3A
Moisture	Method 4
PM - Filterable[1]	Method 5, or Methods 5 and Method 201 or 201A (40 CFR 51, Appendix M), with Method 19 as specified in 40 CFR 60.48a(b)
PM - Condensable	Method 202[2]
NO_x[3]	Method 19, as specified in 40 CFR 60.48a(d)
SO_2[3]	Method 19, as specified in 40 CFR 60.48a(c)
CO	Method 10

VOM[4]	Methods 18 and 25A
Hydrogen Chloride	Method 26
Fluorides (HF)	Method 26
Sulfuric Acid Mist	Method 8[2]
Metals[5, 6]	Method 29
Dioxin/Furan	Method 23
Opacity	Method 9

Notes:

1. The Permittee may report all PM emissions measured by USEPA Method 5 as filterable PM, in which case separate testing using USEPA Method 201 or 201A need not be performed to measure filterable PM_{10}.

2. Notwithstanding the general requirement to use USEPA test methods, appropriate refinements or adaptations may be made to the USEPA test methods or other established test methods may be used for testing for sulfuric acid mist, subject to review and approval by the Illinois EPA to facilitate accurate and reliable measurements given the composition of the exhaust. In particular, adaptations shall be made to USEPA Method 202, to prevent positive bias from conversion of sulfur dioxide to sulfuric acid in the impingers, e.g., by additional purges or separate, simultaneous measurements of the sulfuric acid emissions.

3. Emission testing shall be conducted for purposes of certification of the continuous emissions monitoring systems (CEMS) required by Condition 2.1.9. Thereafter, the SO_2, NO_x and mercury emission data from certified CEMS may be provided in lieu of conducting emissions tests.

4. The Permittee may exclude methane, ethane and other exempt compounds from the results of any VOM test provided that the test protocol to quantify and correct for the presence of any such compounds in the exhaust of the boiler is included in the test plan approved by the Illinois EPA.

5. Testing for metals shall address emissions of mercury, arsenic, beryllium, cadmium, chromium, lead, manganese, and nickel.

6. During the initial emissions testing for metals, the Permittee shall also conduct measurements using established test methods for the principle forms of mercury present in the exhaust, i.e., particle bound mercury, oxidized mercury and elemental mercury.

ii. The results of emission testing may be presented as the average of individual test runs to determine compliance, as provided by 40 CFR 60.8(f) and 35 IAC Part 283.

c. i. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with the Condition 3.2.

ii. In addition to other information required in a test report, test reports shall include detailed information on the operating conditions of the boiler during testing, including:

A. Fuel consumption (in tons);

B. Composition of fuel (Refer to Condition 2.1.10(b)), including the metals, chlorine and fluorine content, expressed in pound per million Btu;

C. Firing rate (million Btu/hr) and other significant operating parameters of the boiler, including temperature of the flue gas entering the SCR;

D. Control device operating rates or parameter, e.g., SCR reagent injection rate, baghouse pressure drop, scrubber pressure drop and reagent addition rate, and WESP voltages current flows and water flow rate;

E. Opacity of the exhaust from the boiler, 6-minute averages and 1-hour averages;

F. Turbine/Generator output rate (MW gross).

2.1.9-1 Emissions Monitoring – SO_2, NO_x and Opacity

a. i. The Permittee shall install, certify, operate, calibrate, and maintain continuous monitoring systems on the affected boiler for opacity, emissions of SO_2 and NO_x, and either oxygen or carbon dioxide in the exhaust. The opacity monitor shall be located before the wet control equipment if needed to prevent interference from moisture in the ductwork.

ii. The Permittee shall also operate and maintain these monitoring systems according to site-specific monitoring plan(s), which shall be submitted at least 60 days before the initial startup of the boiler to the Illinois EPA for review and comment. With this submission, the Permittee shall submit the proposed type of monitoring equipment and proposed sampling location(s), which shall be approved by the Illinois EPA prior to installation of equipment.

iii. The Permittee shall fulfill the applicable requirements for monitoring in: the NSPS, 40 CFR 60.13, 60.47a, and 40 CFR

60 Appendix B; the federal Acid Rain Program, 40 CFR Part 75; 35 IAC Part 217, Subpart W, and the NO_x Trading Program for Electrical Generating Units. These rules require that the Permittee maintain detailed records for both the measurements made by these systems and the maintenance, calibration and operational activity associated with the monitoring systems.

iv. The data management system(s) associated with the continuous monitoring systems shall have the ability to appropriately handle collected monitoring data, as well as relevant operational data, to determine emissions in the various terms that are needed to verify compliance with applicable emission standards and limits.

b. In addition, when NO_x or SO_2 emission data are not obtained from a continuous monitoring system because of system breakdowns, repairs, calibration checks and zero span adjustments, emission data shall be obtained by using standby monitoring systems, emission testing using appropriate USEPA Reference Methods, or other approved methods as necessary to provide emission data for a minimum of 75 percent of the operating hours in the boiler operating day, in at least 22 out of 30 successive boiler operating days, pursuant to 40 CFR 60.47a(f) and (h).

Note: Fulfillment of the above criteria for availability of emission data from a monitoring system does not shield the Permittee from potential enforcement for failure to properly maintain and operate the system.

c. Compliance with the most stringent emission monitoring requirements for a pollutant is sufficient to demonstrate compliance with all emission monitoring requirements for that pollutant.

2.1.9-2 Emissions Monitoring – Mercury

a. The Permittee shall install, operate and maintain a continuous or semi-continuous emissions monitoring system to measure the mercury emissions of the affected boiler in accordance with 40 CFR Part 75, Subpart I.

b. The Permittee shall keep logs for the operation, calibration and maintenance of this monitoring system.

2.1.9-3 Emissions Monitoring – CO

a. If the emissions of CO for the affected boiler measured by testing in accordance with Condition 2.1.8(a)(i) or (ii) are greater than 0.09 lb/million Btu, the Permittee shall install, operate and maintain a continuous monitoring system to measure the CO emissions of the boiler. This system shall continue to be operated until such time as the Illinois EPA approves the removal of the system, following emission testing and submittal of an

emission test report by the Permittee that shows that the CO emissions of the affected boiler are no more than 0.09 lb/million Btu.

b. The Permittee shall keep logs for the operation, calibration and maintenance of this monitoring system.

2.1.10 Operational Monitoring and Measurements

a. The Permittee shall install, evaluate, operate, and maintain meters to measure and record consumption of natural gas by the affected boiler.

b. i. The Permittee shall sample and analyze the sulfur and heat content of the coal supplied to the boiler in accordance with USEPA Reference Method 19 (40 CFR 60, Appendix A, Method 19).

ii. The Permittee shall analyze samples of all coal supplies that are components of the coal supply to the boiler and the coal supply, itself, for mercury and other metals and chlorine content, as follows:

A. Analysis shall be conducted in accordance with USEPA Reference Methods or other method approved by USEPA.

B. Analysis of the fuel supply to the boiler, itself, shall be conducted in conjunction with performance testing of the boiler.

C. Analysis of representative samples of coal shall be conducted in conjunction with acceptance of coal from off-site.

D. Analysis of representative samples of coal shall be conducted at least every two years, if a more frequent analysis is not needed pursuant to the above requirements.

c. i. The Permittee shall install, operate and maintain continuous parametric monitoring systems (CPMS) to measure key operating parameters of the control system for the boiler, including:

A. Reagent injection rate for the SCR system;

B. Pressure drop across the baghouse;

C. Reagent addition rate for the scrubber; and

D. Voltages, currents, sparking rates and water flow for the WESP.

ii. The Permittee shall maintain the records of the measurements made by these systems and records of maintenance and operational activity associated with these systems.

d. i. Within 12 months of the end of the shakedown period for the boiler, the Permittee shall install and operate a continuous emissions monitoring system (CEMS) for PM on the affected boiler for the purpose of compliance assurance monitoring. However, the Permittee may, upon written notice to the Illinois EPA, extend this period for up to an additional 12 months if needed to reasonably complete the installation of the PM CEMS. As part of this notice, the Permittee shall explain why implementation of continuous monitoring cannot reasonably be completed earlier, identify the activities that need to be completed prior to beginning implementation of monitoring, and explain why such activities could not be completed earlier.

ii. This CEMS shall monitor PM concentration downstream of the WESP, provided, however, with approval of the Illinois EPA the sampling point for this CEMS may be shifted to a point upstream of the scrubber if it is demonstrated within 18 months of initial operation of the CEMS that it cannot be reliably operated following the WESP. As part of its approval of relocation of the CEMS, the Illinois EPA may approve operation of the affected boiler without the CEMS for up to 10 days, as such an outage cannot be reasonably avoided while the CEMS is being relocated.

iii. The Permittee shall operate, calibrate and maintain this system in accordance with the applicable USEPA performance specification and other applicable requirements of the NSPS for monitoring systems and in a manner that is generally consistent with published USEPA guidance for use of such systems for compliance assurance monitoring.

iv. The Permittee shall also operate and maintain this system according to a site-specific monitoring plan, which shall be submitted to the Illinois EPA for its review and comment at least 90 days before the initial startup of the monitoring system. With this submission, the Permittee shall submit the proposed type of monitoring equipment and proposed sampling location, which shall be approved by the Illinois EPA prior to installation of equipment.

2.1.11 Recordkeeping

a. The Permittee shall maintain the following records with respect to operation and maintenance of the affected boiler and associated control equipment:

i. An operating log for the boiler that, at a minimum, shall address:

A. Each startup of the boiler, including the nature of the startup, sequence and timing of major steps in the startup, any unusual occurrences during the startup, and any deviations from the established startup procedures, with explanation;

B. Each shutdown of the boiler, including the nature and reason for the shutdown, sequence and timing of major steps in the shutdown, any unusual occurrences during the shutdown, and any deviations from the established shutdown procedures, with explanation; and

C. Each malfunction of the boiler system that significantly impairs emission performance, including the nature and duration of the event, sequence and timing of major steps in the malfunction, corrective actions taken, any deviations from the established procedures for such a malfunction, and preventative actions taken to address similar events.

ii. Inspection, maintenance and repair log(s) for the boiler system that, at a minimum, shall identify such activities that are performed related to components that may effect emissions; the reason for such activities, i.e., whether planned or initiated due to a specific event or condition; and any failure to carry out the established maintenance procedures, with explanation.

iii. Records for the tuning of the boiler required by Condition 2.1.6(a)(v), including identification of the event, condition of the boiler prior to tuning, the condition of the boiler after tuning, and the parameters set as proper tuning of the boiler.

iv. Daily records of steam and electricity generation.

b. The Permittee shall maintain the following records related to the fuel used in the boiler:

i. Records of the sampling and analysis of the fuel supply to the boiler conducted in accordance with Condition 2.1.10(b).

ii. A. Records of the sulfur content of fuel, lb sulfur/million Btu, supplied to the boiler, as determined pursuant to Condition 2.1.10(b)(i); and

B. Records of the sulfur content of fuel supplied to the boiler on a 30-day rolling average, determined from the above data.

iii. Records of the amount of fuel fired in the boiler by type of fuel as specified in 40 CFR Part 60, Appendix A, Method 19.

c. The Permittee shall maintain the following records related to emissions of the boiler:

i. Records of SO_2 and NO_x emissions and operation for each boiler-operating day, as specified by 40 CFR 60.49a.

ii. With respect to the SO_2 reduction-based standard in 40 CFR 60.43a(a)(1), for each 30 day averaging period, records of the SO_2 emissions in lb/million Btu and the required SO_2 emission rate as determined by applying the permissible emission fraction to the potential SO_2 emission rate of the coal supply.

iii. With respect to the limitations in Condition 2.1.7(a), records of the SO_2 and NO_x emission rate in lb/million Btu, for each 30-day averaging period.

iv. For pollutants for which continuous emissions monitoring is not performed to determine compliance, i.e., PM, sulfuric acid mist, VOM, lead, fluorides, hydrogen chloride and CO, if applicable, the following records:

A. Records of the standard emission factors used by the Permittee to determine emissions, with supporting documentation.

B. Records of emissions based on fuel usage, operating data for the boiler and associated control equipment, and the appropriate emission factors, as addressed above, with supporting calculations.

d. The Permittee shall record the following information for any period during which the boiler deviated from an applicable requirement:

i. Each period during which an affected unit exceeded the requirements of this permit, including applicable emission limits, which records shall include at least the information specified by Condition 3.3.

ii. Each period during which opacity of the boiler exceeded the level of opacity at which emission testing has demonstrated that the boiler would comply with PM emission limits.

2.1.12 Notifications

a. The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements that are not addressed by the regular reporting required pursuant to Condition 2.1.13.

These notifications shall include the information specified by Condition 3.5.

2.1.13 Reporting

a. i. The Permittee shall fulfill applicable reporting requirements in the NSPS, 40 CFR 60.7(c) and 60.49a, for the boiler. For this purpose, quarterly reports shall be submitted to the Illinois EPA no later than 30 days after the end of each calendar quarter. (40 CFR 60.49a (i))

ii. In lieu of submittal of paper reports, the Permittee may submit electronic quarterly reports for SO_2 and/or NO_x and/or opacity. The electronic reports shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement indicating whether compliance with applicable emission standards and minimum data requirements of 40 CFR 60.49a were achieved during the reporting period. (40 CFR 60.49a(j))

b. i. Either as part of the periodic NSPS report or accompanying such report, the Permittee shall report to the Illinois EPA any and all opacity and emission measurements for the boiler that are in excess of the respective requirements set by this permit. These reports shall provide for each such incident: the pollutant emission rate; the date and duration of the incident; and whether it occurred during startup, malfunction, breakdown, or shutdown. If an incident occurred during malfunction or breakdown, the corrective actions and actions taken to prevent or minimize future reoccurrences shall also be reported. (40 CFR 60.7(c))

ii. These reports shall also address any deviations from applicable compliance procedures for the boiler established by this permit, including specifying periods during which the continuous monitoring systems were not in operation.

c. The Permittee shall comply with applicable reporting requirements under the Acid Rain Program, with a single copy of such report sent to Illinois EPA, Division of Air Pollution Control Compliance Section.

2.1.14 Construction of Additional Control Measures

a. The Permittee is generally authorized under this permit to construct and operate additional devices and features to control emissions from the boiler, which are not described in the application for this permit, as follows. This condition does not affect the Permittee’s obligation to comply with the applicable requirements for the affected boiler.

b. This authorization only extends to devices or features such as sorbent injection systems that are designed to reduce emissions that are identified during the detailed design of the boiler and any refinements to that design that occur during construction and the initial operation of the boiler. These measures may also serve to improve boiler operation as they reduce consumption of materials, but do not include measures that would increase the boiler's rated heat input capacity.

c. Prior to beginning actual construction of any such device or feature, the Permittee shall apply for and obtain a separate State construction permit for it from the Illinois EPA pursuant to 35 IAC Part 201, Subpart D.

2.1.15 Revision of Emission Limit for Total PM Based on Results of Emission Testing

a. i. The emission limit for Total PM in Condition 2.1.2(b)(i)(B) shall be lowered based on the results of emissions testing unless the Permittee demonstrates and the Illinois EPA concurs, based on an evaluation as set forth below, that a lower limit cannot be reliably met without unacceptable consequences, i.e., inability to comply with other emission limits or requirements or significant risk to equipment or personnel, and without unreasonable consequences, i.e., a significant increase in maintenance and repair needed for the boiler. For this purpose, the Permittee shall conduct at least four additional emission tests beyond the initial performance test (total of at least five tests) spread out during the period in which the evaluation is being performed, with each test including measurements for filterable particulate matter, condensable particulate matter and sulfuric acid mist.

ii. A. If the Permittee fails to perform the necessary emission testing for evaluation of Total PM emissions, the limit for Total PM shall automatically be lowered to 0.018 lb/million Btu.

B. If the Permittee fails to complete the evaluation in a timely manner in accordance with Condition 2.1.15(b), the limit for Total PM shall automatically be lowered to the greater of (1) 0.018 lb/million Btu or (2) the sum of the average of the results from the required periodic compliance tests (excluding any tests showing noncompliance and any test results that do not reflect representative operating conditions or otherwise reflect outlying data) and the standard deviation of such results, rounded to two significant digits. (If the statistical evaluation of test results yields a value greater than 0.035 lb/million Btu, i.e., the limit in Condition 2.1.2(b), the limit shall remain at 0.035 lb/million Btu.)

iii. This permit will be revised to set lower limit(s) for Total PM emissions (but no lower than the above default limits); if the Illinois EPA, after considering the results of any evaluation performed by the Permittee, finds that the boiler can and should be able to consistently comply with such limit(s) without unreasonable consequences.

b. i. If the Permittee elects to perform an evaluation for Total PM emissions, the evaluation shall be performed in accordance with a plan submitted to the Illinois EPA for review and comment. The plan shall provide for evaluation of Total PM emissions at moderate load operation of the boiler as well as operation at full load. The initial plan shall be submitted to the Illinois EPA no later than 180 days after initial start-up of the boiler.

ii. A. This evaluation shall be completed and a detailed written report submitted to the Illinois EPA within three years after the initial startup of the boiler. This report shall include proposed alternative limit(s) for Total PM emissions.

B. This deadline may be extended for an additional year if the Permittee submits an interim report demonstrating the need for additional data to effectively set a revised limit for PM emissions. During this year, at least two more emission tests shall be conducted to collect additional emission data.

CONDITION 2.2: UNIT-SPECIFIC CONDITIONS FOR FUEL AND OTHER BULK MATERIAL HANDLING, STORAGE, PROCESSING AND LOAD OUT OPERATIONS

2.2.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are equipment and facilities handling coal and other bulk materials that are involved with the operation of the affected boiler and that have the potential for particulate matter (PM) emissions. In addition to fuel (coal) for the boiler, limestone is received, handled and stored as a raw material for the scrubber on the boiler. Bottom ash, fly ash and gypsum, which are by-products of the boiler, ESP and scrubber, are also handled, stored and loaded out by truck.

The affected units include new units specifically installed as part of this project. The affected units also include certain existing units that will be altered as part of this project. Only the bottom ash and fly ash from the affected boiler will be handled with entirely new systems. Coal for the affected boiler will be received at the existing truck dump and transferred by existing conveyor to a point above the existing coal storage pile, where coal for the boiler will then be diverted to a new conveyor serving the new coal handling and storage system for the boiler, including the coal storage pile for the boiler. Limestone will be handled in a similar manner, with limestone being received at an existing truck dump and subsequently diverted to the new handling and storage system for limestone for the scrubber on the affected boiler. Gypsum from the affected boiler will be transferred by a new conveyor system to the existing facilities for storage and load out of gypsum, which now handle the gypsum from the scrubbers on the three existing Dallman boilers.

PM emissions associated with certain affected units that handle material that is wet, such as bottom ash and gypsum, will be minimized because the material is wet. PM emissions from the units that handle dry materials will be controlled by various measures including enclosure and covers, application of water and dust suppressants, and dust collection devices.

2.2.2 Control Technology Determination

a. i. PM emissions from an affected unit handling a wet material shall be controlled by:

1. Maintaining the material with adequate moisture to prevent visible emissions directly from such unit during the handling, storage or load out of the material.

2. Collection of spilled material that could become airborne if it dried or were subject to vehicle traffic as part of the Program for Control of Fugitive Dust required by Condition 2.4.

ii. For this purpose, a wet material is a material that has sufficient moisture during normal operation to minimize the potential for direct emissions, including bottom ash from the affected boiler, which will be collected in a water bath at the bottom of the boiler, gypsum from the scrubber on the boiler, which will be produced by mechanical dewatering of scrubber sludge, and other similar materials with high levels of moisture.

b. PM emissions from an affected unit handling a dry material, other than an existing receiving facility for dry material or a storage pile for dry material and handling operations associated with the storage pile, shall be controlled by:

i. Enclosure of the unit so as to prevent visible fugitive emissions, as defined by 40 CFR 60.671, from the affected unit.

ii. Aspiration to a control device designed to emit no more than 0.01 grains/dry standard cubic foot (gr/dscf), which device shall be operated in accordance with good air pollution control practice to minimize emissions. For this purpose, the control device shall be a baghouse or other filtration type device unless the Permittee demonstrates and the Illinois EPA concurs that another type of control device is preferable due to considerations of operational safety.

c. i. Storage piles shall not be used for storage of fly ash unless the ash has been thoroughly mixed with water so as to effectively eliminate the potential for fugitive emissions.

ii. PM emissions from storage piles for dry material, including material handling operations associated with the piles, shall be controlled by application of water or other dust suppressants so as to minimize fugitive emissions to the extent practicable. For this purpose, there shall either:

A. Be no visible emissions from the affected unit, as determined in accordance with USEPA Method 22, or

B. A nominal control efficiency shall be achieved from the uncontrolled emission rate, as follows, as determined using appropriate USEPA emission factors for particulate emissions from handling of a material dry, in the absence of any control of emissions, and engineering analysis and calculations for the control measures that are actually present: 1) Coal: 90 percent; and 2) Limestone: 99 percent.

d. PM emissions from an existing receiving facility for dry material that is used to receive a material for the affected boiler shall be controlled by:

i. Enclosure of the unit and other practices to control PM emissions from the unit such that the opacity of PM emissions does not exceed 10 percent.

ii. Compliance with the requirements of Condition 2.2.2(b)(ii) for any control device that is used to control PM emissions from the unit, if a control device is used.

2.2.3 Applicable Federal Emission Standards

a. Affected units engaged in handling limestone that are affected facilities for purposes of the NSPS for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subpart OOO shall comply with applicable requirements of 40 CFR 60, Subpart OOO and related provisions of 40 CFR 60, Subpart A. The affected facilities for purposes of this NSPS, as specified in 40 CFR 60.670(a), include crushers, grinding mills, screening operations, bucket elevators, belt conveyors, storage bins, and enclosed truck loading stations:

i. Pursuant to the NSPS, 40 CFR 60.672(a), stack emissions of PM from affected facilities are subject to the following limitations:

A. The rate of emissions shall not exceed 0.05 gram/dscm (0.02 gr/dscf).

B. The opacity of emissions shall not exceed 7 percent.*

* This limit would not apply if emissions were to be controlled by a wet scrubber.

ii. Pursuant to the NSPS, 40 CFR 60.672(b), (c) and (d), fugitive emissions of PM from affected facilities are subject to the following limits:

A. The opacity of emissions from any transfer point on a belt conveyor or any other affected facility shall not exceed 10 percent, provided however that this limit would not apply to the opacity of emissions from truck dumping into a screening operation, feed hopper, or crusher, if material were to be dumped directly into an affected facility by truck.

B. Notwithstanding the above, the opacity of fugitive emissions from any crusher for which a capture system is not used, other than emissions from truck dumping into the unit, shall not exceed 15 percent.

iii. Pursuant to the NSPS, 40 CFR 60.672(e), if an affected facility is enclosed in a building, the facility is subject to applicable limits above or the building is subject to the following limits:

A. There shall be no visible fugitive emissions from the building except emissions from a vent as defined in 40 CFR 60.671.

B. Emissions from each vent from the building shall comply with the applicable limits for stack emissions, as set forth in Condition 2.2.3(a)(i).

b. Affected units engaged in handling and processing coal shall comply with applicable requirements of the NSPS for Coal Preparation Plants, 40 CFR 60, Subpart Y, and related provisions of 40 CFR 60, Subpart A.

Pursuant to the NSPS, the opacity of the exhaust from coal processing and conveying equipment, coal storage systems (other than open storage piles), and coal loading systems shall not exceed 20 percent. [40 CFR 60.252(c)]

c. At all times, the Permittee shall maintain and operate affected units that are subject to NSPS, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, pursuant to 40 CFR 60.11(d).

2.2.4 Applicable State Emission Standards

a. The emission of smoke or other PM from affected units shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

b. With respect to emissions of fugitive PM, affected units shall comply with 35 IAC 212.301, which provides that emissions of fugitive PM shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.

c. The emissions of PM from affected units other than units excluded by 35 IAC 212.323 (refer to Condition 2.2.5(b)) shall comply with the applicable limit pursuant to 35 IAC 212.321, which rule limits emissions based on the process weight rate of emission units and allows a minimum emission rate of 0.55 lb/hour for any individual unit.

2.2.5 Applicability of Other Regulations

a. This permit is issued based on the affected units that handle gypsum not being subject to the NSPS, 40 CFR 60 Subpart OOO because the Permittee does not crush or grind gypsum, so that the Permittee does not operate a nonmetallic mineral processing plant, as defined by 40 CFR 60.671, for gypsum.

b. This permit is issued based on the storage piles and associated operations and the coal handling operations associated with the affected boiler not being subject to 35 IAC 212.321 pursuant to 35 IAC 212.323, which provides that 35 IAC 212.321 shall not apply to emission units, such as stock piles, to which, because of the disperse nature of such emission units, such rules cannot reasonably be applied.

2.2.6 Operating Requirements

a. i. Bulk materials, associated with the operation of the affected boiler that have the potential for PM emissions, shall be stored in silos, bins, and buildings, without storage of such materials in outdoor piles except on a temporary basis during breakdown or other disruption in the capabilities of the enclosed storage facilities.

ii. Outdoor storage piles for a dry material associated with the affected boiler shall be equipped and operated with adjustable stacker(s), rotary stacker(s), ladders or other comparable devices to minimize the distance that material drops when added to the pile and minimize the associated PM emissions.

b. The Permittee shall implement and maintain control measures for the affected units that minimize visible emissions of PM and provide assurance of compliance with the applicable limits and standards in Conditions 2.2.2, 2.2.3 and 2.2.4.

c. The affected units, including associated control equipment shall be operated and maintained in accordance with good air pollution control practice to minimize emissions.

2.2.7 Emission Limitations

Annual emissions of particulate matter (PM) from the affected units shall not exceed 11.8 tons/year. Compliance with this annual emission limit shall be determined from a rolling total of 12 months of emission data, calculated from the material handled for the affected boiler, operating information for affected units, and appropriate emission factors. (Refer to Conditions 2.2.11(h).)

2.2.8-1 Initial Performance Testing

a. Within 60 days after achieving the maximum production rate at which each new affected unit subject to NSPS will be operated, but not later than 180 days after initial startup of each such unit, the Permittee shall have emissions tests conducted at its expense as follows below by an approved testing service under unit operating conditions that are representative of maximum emissions.

b. The following methods and procedures shall be used for emission testing:

i. The following USEPA methods and procedures shall be used for the affected units subject to 40 CFR Part 60, Subpart OOO, as specified in 40 CFR 60.675, for PM measurements for stack emissions and opacity measurements for both stack and fugitive emissions:

PM - Method 5 or 17
Opacity - Method 9

ii. The following USEPA methods and procedures shall be used for PM and opacity measurements for the affected units subject to 40 CFR 60, Subpart Y, as specified in 40 CFR 60.254:

PM - Method 5, with the sampling time and sample volume for each run to be at least 60 minutes and 30 dscf and sampling to begin no less than 30 minutes after startup and to terminate before shutdown begins.

Opacity - Method 9, with measurements performed by a certified observer.

c. Test plan(s), test notifications, and test reports shall be submitted to the Illinois EPA in accordance with Condition 3.2.

2.2.8-2 Periodic Testing

a. i. Unless otherwise specified for the affected units by the source's CAAPP permit, the Permittee shall have the opacity of the emissions of the affected units during representative weather and operating conditions determined by a qualified observer in accordance with USEPA Test Method 9, as further specified below.

A. If emissions are normally visible from a unit when it is in operation, as determined by USEPA Reference Method 22, opacity testing shall be conducted at least annually.

B. Upon written request by the Illinois EPA, such testing shall be conducted for specific affected units within 45 calendar days of the request or on the date agreed upon by the Illinois EPA, whichever is later.

ii. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both less than 5.0 percent.

iii. A. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).

B. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.

iv. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

v. The Permittee shall submit a written report for this testing within 15 days of the date of testing. This report shall include:

A. Date and time of testing.

B. Name and employer of qualified observer.

C. Copy of current certification.

D. Description of observation conditions, including recent weather.

E. Description of the operating conditions of the affected processes.

F. Raw data.

G. Opacity determinations.

H. Conclusions.

b. Unless otherwise specified for the affected units by the source's CAAPP permit:

i. Within 90 days of a written request from the Illinois EPA, the Permittee shall have the PM emissions at the stacks or vents of affected units, as specified in such request, measured during representative operating conditions, as set forth below.

ii. A. Testing shall be conducted using appropriate USEPA Test Methods, including Method 5 or 17 for PM emissions.

B. Compliance may be determined from the average of three valid test runs, subject to the limitations and conditions contained in 35 IAC Part 283.

iii. The Permittee shall submit a test plan to the Illinois EPA at least 60 days prior to testing, which plan shall include

the information for test plans specified by General Condition 8.6.2 of the source's CAAPP permit.

iv. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may, at its discretion, accept notification with shorter advance notice provided that the Illinois EPA will not accept such notification if it interferes with the Illinois EPA's ability to observe the testing.

v. The Permittee shall expeditiously submit Final Report(s) for required emission testing to the Illinois EPA, no later than 90 days after the date of testing. These reports shall include the information specified in Condition 8.6.3 of the source's CAAPP permit and the following information:

A. A summary of results.

B. Detailed description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.

C. Detailed description of the operating conditions of the affected process during testing, including operating rate (tons/hr) and the control measures being used.

D. Detailed data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

E. Representative opacity data (6-minute average) measured during testing.

2.2.9 Operational Instrumentation

a. The Permittee shall install, operate and maintain systems to measure the pressure drop across each baghouse used to control affected units, other than bin vent filters and other similar filtration devices.

b. The Permittee shall maintain the records of the measurements made by these systems and records of maintenance and operational activity associated with the systems.

2.2.10 Inspections

a. i. The Permittee shall conduct inspections of affected units on at least a monthly basis with personnel who are not directly responsible for the day-to-day operation of these units, for the specific purpose of verifying that the measures identified in the operating program and other measures required to control emissions from affected units are being properly implemented.

ii. These inspections shall include observation for the presence of visible emissions, performed in accordance with USEPA Method 22, from buildings in which affected units are located and from units from which the Permittee has elected to demonstrate no visible emissions.

b. The Permittee shall perform detailed inspections of the dust collection equipment for affected units while the units are out of service, with an initial inspection performed before any maintenance and repair activities are conducted during the period the unit is out of service and a follow-up inspection performed after any such activities are completed. These inspections shall be conducted at least every 15 months, except for control devices for units handling dry fly ash. Units handling dry fly ash shall be inspected at least every 9 months or, if the affected boiler has operated without a scheduled outage for more than 9 months since the previous inspection, during the next scheduled outage of the boiler or during any unscheduled outage of the affected boiler that extends for more than 143 hours, whichever occurs first.

2.2.11 Recordkeeping

a. For affected units that are subject to NSPS, the Permittee shall fulfill applicable recordkeeping requirements of the NSPS, 40 CFR 60.7 and 60.676 (applicable to units handling limestone).

b. The Permittee shall maintain file(s), which shall be kept current, that contain:

i. The maximum operating capacity of each affected unit or group of related units (tons/hour).

ii. A. For the baghouses and other filter devices associated with affected units, design specifications for each device (type of unit, maximum design exhaust flow (acfm and scfm), filter area, type of filter cleaning, performance guarantee for particulate exhaust loading in gr/scf, etc.), the manufacturer’s recommended operating and maintenance procedures for the device, and design specification for the filter material in each device (type of material, surface treatment(s) applied to material, weight, performance guarantee, warranty provisions, etc.).

B. For each baghouse, the normal range of pressure drop across the device and the minimum and maximum safe pressure drop for the device, with supporting documentation.

iii. For affected units that are not controlled with baghouses or other filter-type devices, a detailed description of the work practices used to control emissions of PM pursuant to Condition 2.2.6(c). These control measures are referred to as the "established control measures" in this subsection of this permit.

iv. The designated PM emission rate, in pounds/hour and tons/year, from affected units, either individually or grouped by related units, with supporting calculations and documentation, including detailed documentation for the level of emissions control achieved through the work practices that are used to control PM emissions. For each category of affected unit (e.g., coal handling), the sum of these emission rates shall not exceed the totals in Table 1-B for the category of affected unit. (See also Condition 2.2.7.)

v. A demonstration that confirms that the above established control measures are sufficient to assure compliance with the above emissions rates and, for units to which it applies, Condition 2.2.4(c), at the maximum process weight rate at which each affected unit can be operated (tons/hour), with supporting emission calculations and documentation for the emission factors and the efficiency of the control measures being relied upon by the Permittee. Except as addressed by Condition 2.2.11(a)(ii) or testing of PM emissions from an affected unit is conducted in accordance with Condition 2.2.7, this demonstration shall be developed using emission factors for uncontrolled PM emissions, efficiency of control measures, and controlled PM emissions published by USEPA.

c. The Permittee shall keep records for the amount of bulk materials associated with the operation of the affected boiler received by or loaded out from the source by category or type of material (tons/month).

d. i. The Permittee shall keep inspection and maintenance log(s) for the control measures associated with the affected units, including buildings and enclosures, dust suppression systems and control devices.

ii. These records shall include the following information for the inspections required by Condition 2.2.10(a):

A. Date and time the inspection was performed and name(s) of inspection personnel.

B. The observed condition of the control measures for each affected unit, including the presence of any visible emissions.

C. A description of any maintenance or repair associated with established control measures that is recommended as a result of the inspection and a review of outstanding recommendations for maintenance or repair from previous inspection(s), i.e., whether recommended action has been taken, is yet to be performed or no longer appears to be required.

D. A summary of the observed implementation or status of actual control measures, as compared to the established control measures.

iii. These records shall include the following information for the inspections required by Condition 2.2.10(b):

A. Date and time the inspection was performed and name(s) of inspection personnel.

B. The observed condition of the dust collection equipment.

C. A summary of the maintenance and repair that is to be or was conducted on the equipment.

D. A description of any maintenance or repair that is recommended as a result of the inspection and a review of outstanding recommendations for maintenance or repair from previous inspection(s), i.e., whether recommended action has been taken, is yet to be performed or no longer appears to be required.

E. A summary of the observed condition of the equipment as related to its ability to reliably and effectively control emissions.

e. The Permittee shall maintain records of the following for each incident when any affected unit operated without the control measures required by Condition 2.2.2 or 2.2.6(b) or (c):

i. The date of the incident and identification of the unit(s) that were involved.

ii. A description of the incident, including: the established control measures that were not present or implemented; the established control measures that were present, if any; and other control measures or mitigation measures that were implemented, if any.

iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel.

iv. Operational data for the incident, e.g., the measured pressure drop of a baghouse, if the pressure drop of the baghouse, as measured pursuant to Condition 2.2.9, deviated outside the levels set as good air pollution control practices.

v. The corrective action(s) taken and the length of time after the incident was identified that the unit(s) continued to operate before established control measures were in place or the operations were shutdown (to resume operation only after established control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a detailed description of any mitigation measures that were implemented during the incident.

vi. The estimated total duration of the incident, i.e., the total length of time that the unit(s) ran without established control measures and the estimated amount of material processed during the incident.

vii. A discussion of the probable cause of the incident and any preventative measures taken.

viii. An estimate of any additional emissions of PM (pounds) above the PM emissions associated with normal operation that resulted from the incident, if any, with supporting calculations.

ix. A discussion whether any applicable emission standard, as listed in Condition 2.2.2, 2.2.3, or 2.2.4 or any applicable emission rate, as identified in the records pursuant to Condition 2.2.10(b), may have been violated during the incident, with an estimate of the amount of any excess PM emissions (lbs) and supporting explanation.

f. The Permittee shall maintain the following records for the emissions of the affected units:

i. A file containing the standard emission factors used by the Permittee to determine PM emissions from the units, with supporting documentation.

ii. Records of PM emissions based on operating data for the unit(s) and appropriate emission factors, with supporting documentation and calculations.

g. The Permittee shall keep records for all opacity measurements made in accordance with USEPA Method 9 for affected units that it conducts or that are conducted at its behest by individuals who

are qualified to make such observations. For each occasion on which such measurements are made, these records shall include the formal report for the measurements if conducted pursuant to Condition 2.2.7-1 or 2.2.7-2, or otherwise the identity of the observer, a description of the measurements that were made, the operating condition of the affected unit, the observed opacity, and copies of the raw data sheets for the measurements.

2.2.12 Notifications

The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable emission standards or operating requirements for the affected units that continue* for more than 24 hours. These notifications shall include the information specified by Condition 3.5.

* For this purpose, time shall be measured from the start of a particular event. The absence of a deviation for a short period shall not be considered to end the event if the deviation resumes. In such circumstances, the event shall be considered to continue until corrective actions are taken so that the deviation ceases or the Permittee takes the affected unit out of service for repairs.

2.2.13 Reporting Requirements

a. The Permittee shall submit quarterly reports to the Illinois EPA for all deviations from emission standards, including standards for visible emissions and opacity, and operating requirements set by this permit. These notifications shall include the information specified by Condition 3.5.

b. These reports shall also address any deviations from applicable compliance procedures established by this permit for affected units.

2.2.14 Operational Flexibility

The Permittee is authorized, as follows, to construct and operate affected units that differ from those described in the application in certain respects without obtaining further approval by the Illinois EPA. This condition does not affect the Permittee’s obligation to comply with all applicable requirements for affected units:

a. This authorization only extends to changes that result from the detailed design of the project and any refinements to that design of the affected units that occur during construction and the initial operation of the affected facility.

b. With respect to air quality impacts, these changes shall generally act to improve dispersion and reduce impacts, as emissions from individual units are lowered, units are moved apart or away from the fence line, stack heights are increased, and heights of nearby structures are reduced.

c. The Permittee shall notify the Illinois EPA prior to proceeding with any changes. In this notification, the Permittee shall describe the proposed changes and explain why the proposed changes will act to reduce impacts, with detailed supporting documentation.

d. Upon written request by the Illinois EPA, the Permittee shall promptly have air quality dispersion modeling performed to demonstrate that the overall effect of the changes is to reduce air quality impacts, so that impacts from affected units remain at or below those predicted by the air quality analysis accompanying the application.

CONDITION 2.3: UNIT-SPECIFIC CONDITIONS FOR COOLING TOWER

2.3.1 Description of Emission Unit

The affected unit for the purpose of this unit-specific condition is a cooling tower associated with the steam cycle for the affected boiler. The cooling tower is a source of particulate because of mineral material present in the water, which is emitted to the atmosphere due to water droplets that escape from the cooling tower or completely evaporate. The emissions of PM are controlled by drift eliminators, which collect water droplets entrained in the air exhausted from the cooling tower.

2.3.2 Control Technology Determination

The affected unit shall be equipped, operated, and maintained with drift eliminators designed to limit the loss of water droplets from the unit to not more than 0.0005 percent of the circulating water flow.

2.3.3 Applicable Federal Emission Standards

None

2.3.4 Applicable State Emission Standards

a. The emission of smoke or other PM from the affected unit shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

b. With respect to emissions of fugitive PM, the affected unit shall comply with 35 IAC 212.301, which provides that emissions of fugitive PM shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.

c. The emissions of PM from the affected unit shall comply with the applicable limit pursuant to 35 IAC 212.321.

2.3.5 Applicability of Other Regulations

None

2.3.6 Operating Requirements

a. Chromium-based water treatment chemicals, as defined in 40 CFR 63.401, shall not be used in the affected unit.

b. i. The Permittee shall equip the affected unit with appropriate features, such as louvered heating coils

designed to heat tower plenum air as required, to enable it to be operated without a significant contribution to fogging and icing on offsite roadways during periods when fogging or icing are present in the area or weather conditions are conducive to fogging or icing.

ii. Notwithstanding the above, the Permittee need not include such features in the affected unit if it demonstrates by appropriate analysis, as approved in writing by the Illinois EPA, that the cooling tower will be sited and designed and can be operated such that additional features are not needed to prevent a significant contribution to fogging and icing on offsite roadways.

c. The Permittee shall operate and maintain the affected unit, including the drift eliminators, in a manner consistent with good air pollution control practices for minimizing emissions.

d. The Permittee shall operate and maintain the affected unit in accordance with written operating procedures, which procedures shall be kept current. These procedures shall address the practices that will be followed as good air pollution control practices and the actions that will be followed to prevent a significant contribution to icing and fogging on offsite roadways.

2.3.7 Emission Limitations

The total annual emissions of PM from the affected unit shall not exceed 9.64 tons/year, as determined by appropriate emission factors and engineering calculations.

2.3.8 Emission Testing

None

2.3.9 Work Practices

The Permittee shall maintain the drift eliminators in the affected unit in a manner consistent with good air pollution control practices for minimizing emissions.

2.3.10 Operational Measurements

a. The Permittee shall sample and analyze the water being circulated in the affected unit on at least a monthly basis for the total dissolved solids content. Measurements of the total dissolved solids content in the wastewater discharge associated with the affected unit, as required by a National Pollution Discharge Elimination System permit, may be used to satisfy this requirement if the effluent has not been diluted or otherwise treated in a manner that would significantly reduce its total dissolved solids content.

b. Upon written request by the Illinois EPA, the Permittee shall promptly have the water circulating in the affected unit sampled and analyzed for the presence of hexavalent chromium in accordance with the procedures of 40 CFR 63.404(a) and (b).

2.3.11 Records

a. The Permittee shall keep a file that contains:

i. The design loss specification for the drift eliminators installed in the affected unit.

ii. The suppliers' recommended procedures for inspection and maintenance of the drift eliminators.

iii. The operating factors, if any, used to determine the amount of water circulated in the affected unit or the PM emissions from the affected unit, with supporting documentation.

iv. Copies of the Material Safety Data Sheets or other comparable information from the suppliers for the various water treatment chemicals that are added to the water circulated in the affected unit.

b. The Permittee shall keep the following operating records for the affected unit:

i. The amount of water circulated in the affected unit, gallons/month. As an alternative to direct data for water flow, these records may contain other relevant operating data for the unit (e.g., water flow to the unit) from which the amount of water circulated in the unit may be reasonably determined.

ii. Each occasion when the Permittee took action to prevent a significant contribution to fogging or icing from the affected unit, including the date and duration, the action or actions that were taken, the weather conditions that triggered such actions, and the weather conditions when such actions were terminated.

c. The Permittee shall keep inspection and maintenance logs for the drift eliminators installed in the affected unit.

d. The Permittee shall maintain records for the PM emissions of the affected unit based on the above records, the measurements required by Condition 2.3.10(a), and appropriate USEPA emission estimation methodology and emission factors, with supporting calculation.

2.3.12 Notifications

The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements that are not addressed by the regular reporting required by Condition 2.3.13. These notifications shall include the information specified by Condition 3.5.

2.3.13 Reporting

If the cooling tower is equipped with features to address fogging and icing, as addressed by Condition 2.3.6(b), the Permittee shall submit quarterly reports to the Illinois EPA summarizing the records required by Condition 2.3.11(b)(ii) and identifying any deviation from established practices for the use of such features.

CONDITION 2.4: UNIT-SPECIFIC CONDITIONS FOR ROADWAYS AND OTHER OPEN AREAS

2.4.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are roadways, parking areas, and other open areas associated with the operation of the affected boiler and with existing activities at the plant,* which may be sources of fugitive particulate due to vehicle traffic or wind blown dust. These emissions are controlled by paving and implementation of work practices to prevent the generation and emissions of particulate matter.

* Emissions of affected units associated with existing activities at the plant are addressed by this condition because of the magnitude of their contribution to the maximum impacts of the plant on particulate matter air quality, as determined by the air quality analysis accompanying the permit application, which impacts occur along the northwestern corner of the plant's fence line.

2.4.2 Control Technology Determination

a. The opacity of fugitive particulate emissions from affected units, except during periods of high wind speeds, shall not exceed 10 percent opacity. For this purpose, opacity and the presence of high wind speeds shall be determined in accordance with 35 IAC 212.109 and 35 IAC 212.314, respectively.

b. i. Good air pollution control practices shall be implemented to minimize and significantly reduce nuisance dust from affected units associated with the affected boiler. After construction of the affected boiler is complete, these practices shall provide for pavement on all regularly traveled roads and treatment (flushing, vacuuming, dust suppressant application, etc.) of roadways and areas that are routinely subject to vehicle traffic for very effective control of dust (nominal 90 percent control).

ii. For this purpose, roads that serve any new office building, new employee parking areas or are used on a daily basis by operating and maintenance personnel for the affected boiler in the course of their typical duties, roads that experience heavy use during regularly occurring maintenance of the affected boiler during the course of a year, shall all be considered to be subject to regular travel and are required to be paved. Regularly traveled roads shall be considered to be subject to routine vehicle traffic except as they are used primarily for periodic maintenance and are currently inactive or as traffic has been temporarily blocked off. Other roads shall be considered to be routinely traveled if activities are occurring such that they are experiencing significant vehicle traffic.

c. The handling of material collected from any affected unit associated with the affected boiler by sweeping or vacuuming

trucks shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods to control PM emissions.

2.4.3 Applicable Federal Emission Standards

None

2.4.4 Applicable State Emission Standards

a. All affected units shall comply with 35 IAC 212.301, which provides that emissions of fugitive particulate matter shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed is greater than 25 miles per hour, as provided by 35 IAC 212.314.

2.4.5 Applicability of Other Regulations

None

2.4.6 Operational and Production Limits and Work Practices

a. The Permittee shall carry out control of fugitive particulate emissions from all affected units in accordance with a written operating program describing the measures being implemented in accordance with Conditions 2.4.2(b) and 2.4.4 to control emissions at each unit with the potential to generate significant quantities of such emissions, which program shall be kept current.

i. The written operating program shall include:

A. Maps or diagrams indicating the location of affected units with the potential to generate significant quantities of fugitive particulate, with description of the unit (length, width, surface material, etc.) and volume and nature of expected vehicle traffic, or other activity on such unit, and an identification of any roadways that are not considered routinely traveled, with justification.

B. A detailed description of the emissions control technique(s) (e.g., vacuum truck, water spray, surfactant spray, water flushing, dust suppressant application, or sweeping) for the affected unit, including: typical application rate; type and concentration of additives; normal frequency with which measures would be implemented; circumstances, in which the measure would not be implemented, e.g., recent precipitation; triggers for additional control, e.g., observation of 8 percent opacity; and calculated control efficiency for PM emissions.

ii. The Permittee shall submit copies of the written operating program to the Illinois EPA for review as follows:

A. A program addressing affected units during the construction of the affected boiler and associated facilities shall be submitted within 30 days of beginning actual construction of this project.

B. A program addressing affected units with the operation of the affected boiler and associated facilities shall be submitted within 90 days of initial start up of the affected boiler.

C. Significant amendments to the program by the Permittee shall be submitted within 30 days of the date that the amendment is made.

iii. A revised operating program shall be submitted to the Illinois EPA for review within 90 days of a request from the Illinois EPA for revision to address observed deficiencies in control of fugitive particulate emissions.

b. The Permittee shall conduct inspections of affected units on at least a weekly basis during construction of the affected boiler and associated facilities and on a monthly basis thereafter with personnel not directly responsible for the day-to-day implementation of the fugitive dust control program, for the specific purpose of verifying that the measures identified in the operating program and other measures required to control emissions from affected units are being properly implemented.

2.4.7 Emission Limitations

a. The emissions of PM from affected units, as PM10, shall not exceed the following limits. Compliance with these limits shall be determined by vehicle traffic and other operating data for the affected boiler and other activities at the plant, information for the implementation of the operating program, appropriate emission factors, and engineering calculations.

i. Total emissions from the affected units associated with operation of the affected boiler shall not exceed 7.7 tons/year.

ii. Total emissions from all affected units shall not exceed 20.6 tons/year.

iii. Total emissions from the “entrance road” shall not exceed 5.8 tons/year and 31.8 pounds/day. For this purpose, the entrance road is the road segment starting at the entrance to the plant on Stevenson Drive and continuing along near the northwestern borders of the plant for approximately 1100 feet, upon which most trucks serving the plant travel.

2.4.8 Emission Testing

None

2.4.9 Opacity Observations

a. The Permittee shall conduct observations of the opacity of fugitive particulate emissions from the affected units as follows.

b. Performance observations, which include a series of observations, shall be conducted as follows to determine the range of opacity from affected units and the change in opacity as related to the amount and nature of vehicle traffic and implementation of the operating program. For performance observations, the Permittee shall submit test plans, test notifications and test reports, as specified by General Condition 3.2.

i. Performance observations shall first be completed no later than 30 days after the date that initial emission testing of the affected boiler is performed, as required by Condition 2.1.8, in conjunction with the measurements of silt loading on the affected units required by Condition 2.4.10.

ii. Performance observations shall be repeated within 30 days in the event of changes involving affected units that would act to increase opacity (so that observations that are representative of the current circumstances of the affected units have not been conducted), including changes in the amount or type of traffic on affected units, changes in the standard operating practices for affected units, such as application of salt or traction material during cold weather, and changes in the operating program for affected units.

c. Compliance observations shall be conducted for affected units on at least a quarterly basis to verify opacity levels and confirm the effectiveness of the operating program in controlling emissions.

d. Upon written request by the Illinois EPA, the Permittee shall conduct performance or compliance observations, as specified in the request. Unless another date is agreed to by the Illinois EPA, performance observations shall be completed within 30 days and compliance observations shall be completed within 5 days of the Illinois EPA's request.

2.4.10 Operational Measurements

a. The Permittee shall conduct measurements of the silt loading on various affected roadway segments and parking areas, as follows:

i. Sampling and analysis of the silt loading shall be conducted using the "Procedures for Sampling Surface/Bulk Dust Loading," Appendix C.1 in *Compilation of Air Pollutant Emission Factors*, USEPA, AP-42. A series of samples shall be taken to determine the average silt loading and address the change in silt loadings as related to the amount and nature of vehicle traffic and implementation of the operating program.

ii. Measurements shall be performed by the following dates:

A. Measurements shall first be completed no later than 30 days after the date that initial emission testing of the affected boiler is performed, as required by Condition 2.1.8.

B. Measurements shall be repeated within 30 days in the event of changes involving affected units that would act to increase silt loading (so that data that is representative of the current circumstances of the affected units has not been collected), including changes in the amount or type of traffic on affected units, changes in the standard operating practices for affected units, such as application of salt or traction material during cold weather, and changes in the operating program for affected units.

C. Upon written request by the Illinois EPA, the Permittee shall conduct measurements, as specified in the request, which shall be completed within 75 days of the Illinois EPA's request.

iii. The Permittee shall submit test plans, test notifications and test reports for these measurements as specified by General Condition 3.2.

2.4.11 Records

a. The Permittee shall keep a file that contains:

i. The operating factors, if any, used to determine the amount of activity associated with the affected units or the PM emissions from the affected units, with supporting documentation.

ii. The designated PM emission rate, in tons/year, from each category of affected units (e.g., traffic associated with receiving of limestone for the affected boiler), with supporting calculations and documentation. The sum of these rates shall not exceed the annual limit on emissions in Condition 2.4.7.

b. The Permittee shall maintain records documenting implementation of the operating program required by Condition 2.4.6, including:

i. Records for each treatment of an affected unit or units:

A. The identity of the affected unit(s), the date and time, and the identification of the truck(s) or treatment equipment used;

B. For application of dust suppressant by truck: target application rate or truck speed during application, total quantity of water or chemical used and, for application of a chemical or chemical solution, the identity of the chemical and concentration, if applicable;

C. For sweeping or cleaning: Identity of equipment used and identification of any deficiencies in the condition of equipment; and

D. For other type of treatment: A description of the action that was taken.

ii. Records for performance of the inspections required by Condition 2.4.6(b), including description of inspection, date and time, and findings.

iii. Records for each incident when control measures were not implemented and each incident when additional control measures were implemented due to particular activities, including description, date, the means by which the incident was identified, a statement of explanation, and expected duration of such circumstances.

c. The Permittee shall record any period during which an affected unit was not properly controlled as required by this permit, which records shall include at least the information specified by General Condition 3.3 and an estimate of the additional PM emissions that resulted, if any, with supporting calculations.

d. The Permittee shall keep records for the measurements conducted for affected units pursuant to Condition 2.4.9, including records for the sampling and analysis activities and results.

e. The Permittee shall maintain records for the PM emissions of the affected units to verify compliance with the limits in Condition 2.4.7, based on operating data for the affected boiler and other activities at the plant, the above records for the affected units including data for implementation of the operating program, and appropriate USEPA emission estimation methodology and emission factors, with supporting calculations.

2.4.12 Notifications

The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements for affected units that are

not addressed by the regular reporting required below. These notifications shall include the information specified by General Condition 3.5.

2.4.13 Reporting

The Permittee shall submit quarterly reports to the Illinois EPA for affected units stating the following: the dates any necessary control measures were not implemented; a listing of those control measures; the reasons that the control measures were not implemented; and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not implemented based on a belief that implementation of such control measures would have been unreasonable given prevailing weather conditions. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar quarter.

SECTION 3: GENERAL PERMIT CONDITIONS

CONDITION 3.1: STANDARD CONDITIONS

Standard conditions for issuance of construction permits, attached hereto and incorporated herein by reference, shall apply to this boiler addition project, unless superseded by other conditions in the permit. (SEE ALSO ATTACHMENT 3)

CONDITION 3.2: GENERAL REQUIREMENTS FOR EMISSION TESTING

a. i. If submittal of a test plan is required for emission testing required by this permit, the test plan shall be submitted to the Illinois EPA for review at least 60 days prior to the actual date of testing. This plan shall describe the specific procedures for testing and shall, at a minimum, include the following information:

A. The person(s) who will be performing sampling and analysis and their experience with similar tests.

B. The specific conditions, e.g., operating rate and control device operating conditions, under which testing shall be performed including a discussion of why these conditions will be representative and the means by which the operating parameters will be determined.

C. The specific determinations of emissions that are intended to be made, including sampling or monitoring locations. As part of this plan, the Permittee may set forth a strategy for performing emission testing in the normal load range of the boiler.

D. The test method(s) that will be used, with the specific analysis method if the method can be used with different analysis methods.

ii. As provided by 35 IAC 283.220(d), the Permittee need not submit a test plan for subsequent emissions testing that will be conducted in accordance with the procedures used for previous tests accepted by the Illinois EPA or the previous test plan submitted to and approved by the Illinois EPA, provided that the Permittee's notification for testing, as required below, contains the information specified by 35 IAC 283.220(d)(1)(A), (B) and (C).

b. i. The Permittee shall notify the Illinois EPA prior to performing emissions testing required by this permit to enable the Illinois EPA to observe the tests. Notification for the expected date of testing shall be submitted a minimum of 30 days* prior to the expected date, and identify the testing that will be performed. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days* prior to the actual date of testing.

* For a particular test, the Illinois EPA may at its discretion accept shorter advance notification provided that it does not interfere with the Illinois EPA's ability to observe testing.

ii. This notification shall also identify the parties that will be performing testing and the set or sets of operating conditions under which testing will be performed.

c. The Permittee shall submit three copies of the Final Reports for emission testing required by this permit to the Illinois EPA within 30 days after the test results are compiled and finalized but not later than 90 days after the date of testing. At a minimum, the Final Report for testing shall contain:

i. General information, i.e., testing personnel and test dates;

ii. A summary of results;

iii. Description of test method(s), including a description of sampling points, sampling train, analysis equipment, and test schedule;

iv. The operating conditions of the emission unit and associated control devices during testing; and

v. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.

CONDITION 3.3: REQUIREMENTS FOR RECORDS FOR DEVIATIONS

Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the source, records for deviations from applicable permit requirements shall include at least the following information: the date, time and estimated duration of the event; a description of the event; the manner in which the event was identified, if not readily apparent; the probable cause for deviation, if known, including a description of any equipment malfunction/breakdown associated with the event; information on the magnitude of the deviation, including actual emissions or performance in terms of the applicable standard if measured or readily estimated; confirmation that standard procedures were followed or a description of any event-specific corrective actions taken; and a description of any preventative measures taken to prevent future occurrences, if appropriate.

CONDITION 3.4: RETENTION AND AVAILABILITY OF RECORDS

Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the source, all records, including written procedures and logs, required by this permit shall be kept at a readily accessible location at the affected facility and be available for inspection

and copying by the Illinois EPA and shall be retained for at least five years.

CONDITION 3.5: NOTIFICATION AND REPORTING OF DEVIATIONS

Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the source, notifications and reports for deviations from applicable permit requirements shall include at least the following information: the date and time of the event, a description of the event, information on the magnitude of the deviation, a description of the corrective measures taken, and a description of any preventative measures taken to prevent future occurrences.

CONDITION 3.6: GENERAL REQUIREMENTS FOR NOTIFICATION AND REPORTS

a. i. Unless otherwise specified in the particular provision of this permit, in a subsequent CAAPP Permit for the source, or in the written instructions distributed by the Illinois EPA for particular reports, reports and notifications shall be sent to the Illinois EPA – Air Compliance Section with a copy sent to the Illinois EPA – Air Regional Field Office.

ii. As of the date of issuance of this permit, the addresses of the office that should generally be utilized for the submittal of reports and notifications are as follows:

A. Illinois EPA – Air Compliance Section

Illinois Environmental Protection Agency
Bureau of Air
Compliance and Enforcement Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

B. Illinois EPA – Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

C. USEPA Region 5 – Air Branch

USEPA (AE-17J)
Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

b. The Permittee shall submit Annual Emission Reports to the Illinois EPA in accordance with 35 IAC Part 254. For hazardous air pollutants, these reports shall include emissions information for at least the following pollutants: hydrogen chloride, hydrogen fluoride, mercury, arsenic, beryllium, cadmium, chromium, lead, manganese, and nickel.

ATTACHMENT 1: EMISSION LIMITATIONS

Table 1-A: Emission Limitations for the Affected Boiler

Pollutant	Pounds/Million Btu[a]	Pounds/Hour[b]	Tons/Year[c]
CO	0.120[d]	293, 3-Hour Average	1,281
PM Filterable[e]	0.012	29.3, 3-Hour Average	128
PM Total[f]	0.035	85.3, 3-Hour Average	374
Sulfuric Acid Mist	0.0050	12.2, 3-Hour Average	53
SO_2	0.20	490, 30-Day Average	2,135
NO_x	0.10	245, 30-Day Average	1,068
VOM	0.0036	8.80, 3-Hour Average	38.4
Fluorides[g]	---	0.60, 3-Hour Average	2.6
Lead	---	0.050, 3-Hour Average	0.22
Hydrogen Chloride	---	17.5, 3-Hour Average[h]	76.5
Mercury	---	0.00525, 3-Hour Average[h]	0.023

Notes:

a. Emission limitations expressed in pound/million Btu heat input are provided for informational purposes. They reflect requirements for CO, PM and sulfuric acid mist emissions in Condition 2.1.2(b), the requirement for VOM emissions in Condition 2.1.2(d)(ii)(B), and requirements for SO_2 and NO_x emissions in Condition 2.1.7(b).

b. Compliance with limitations expressed in pound/hour shall be based on 30-day rolling averages for NO_x and SO_2 and 3-hour block averages for other pollutants, except that compliance with the CO limitation shall be based on 24-hour block averages if a continuous emission monitoring system for CO is operated pursuant to Condition 2.1.9-3.

c. These limitations address all emissions from the boiler, including emissions that occur during periods of startup, shutdown and malfunction, as addressed by Condition 2.1.6.

d. This limitation does not apply for startup or shutdown of the affected boiler.

e. These limitations address filterable PM. All PM measured by USEPA Method 5 shall be considered filterable PM unless PM emissions are tested by USEPA Method 201 or 201A. These limitations do not address condensable particulate.

f. These PM limitations address both filterable and condensable particulate.

g. The limitations for fluorides are expressed in terms of hydrogen fluoride.

h. This limitation does not apply during periods of startup, shutdown and malfunction, as addressed by Condition 2.1.6.

Table 1-B: Limitations for PM Emissions from Material Handling Operations

Operation	Limitations	
	Pounds/Hour	Tons/Year
Coal Handling	---	4.42
Limestone Handling	---	0.16
Gypsum Handling	---	0.40
Ash Handling	0.559	2.45
Storage Piles[a]	---	4.22
Total	---	11.80

Notes

a. The limitation for storage piles addresses pile maintenance and wind erosion from the various storage piles.

Table 1-C: Alternative Emission Limitations[a] for the Affected Boiler For Various Pollutants Upon the Effectiveness of the Limits in Attachment 5.6

Pollutant	Emission Rate[b]	Alternative Limitations	
		Pounds/Hour[c]	Tons/Year[d]
PM Filterable	0.010 lb/mmBtu	24.4, 3-Hour Average	107
PM Total	0.020 lb/mmBtu	48.8, 3-Hour Average	214
Sulfuric Acid Mist	0.0040 lb/mmBtu	9.8, 3-Hour Average	42.7
SO_2	0.154 lb/mmBtu	377, 30-Day Average	1,644
NO_x	0.06 lb/mmBtu	147, 30-Day Average	641

Notes:

a. The purpose of the alternative emission limitations in this table is to show the reduction in the permitted emissions of the Affected Boiler that will accompany the effectiveness of the limitations in Attachment 5.6, as compared to the potential emissions of the Affected Boiler as set forth in Table 1-A. The establishment of the limits in this table does not affect other requirements in the permit or Attachment 5.6, which would require lower rates of emissions from the Affected Boiler, such as the requirement to achieve at least 99 percent control of SO_2 emissions exclusive of startup, shutdown and malfunction.

b. These emission rates are only provided for informational purposes, to explain the derivation of the alternative limitations that apply in pounds/hour and tons/year. For PM, the rates restate the numerical limits in Attachment 5.6, prior to any adjustments as also provided for by Attachment 5.6. For sulfuric acid mist, the rate reflects the limit in Attachment 5.6. For NO_x, the rate reflects the limit in Attachment 5.6, 0.06 lb/mmBtu, which applies for all operation of the boiler, including startup, shutdown and malfunction. Similarly, for SO_2, the rate is derived from the limit in Attachment 5.6, 98 percent control efficiency, which applies to all operation of the boiler, assuming a maximum sulfur content in the coal supply to the boiler that is 10 percent greater than that in the design coal supply.

b. The applicable hourly limitation is the product of the applicable emission rate and the rated heat input capacity or the electrical output of the boiler-unit, i.e., 2,440 million and 250 MW Btu/hour. Compliance with limitations expressed in pound/hour shall be based on 30-day rolling averages for NO_x and SO_2 and 3-hour block averages for other pollutants.

c. The annual limitation is generally the product of the applicable hourly limitation and continuous operation of the boiler. For mercury, the annual limitation is the product of the emission rate, the maximum hourly electrical output of the boiler-unit, and continuous operation. Compliance with these annual limitations shall be determined from a rolling total of monthly emission data, i.e., from the sum of emission data for a particular month and the preceding 11 months, for a total of 12 months of data.

ATTACMENT 2

Table 2-A Potential Emissions of the Project for PSD Pollutants (Tons/Year)

Unit	Pollutant							
	PM	CO	SO_2	NO_x	VOM	Sulfuric Acid Mist	Fluorides	Lead
Boiler	374	1282	2135	1068	38.4	53	2.6	0.22
Material Handling	11.65	---	---	---	---	---	---	---
Cooling Tower	9.64	---	---	---	---	---	---	---
Roadways	7.7	---	---	---	---	---	---	---
Emergency Engines	0.05	0.38	0.04	2.0	0.05	---	---	---
Total	403	1282	2135	1070	38.5	53	2.6	0.22

Table 2-B Summary of Net Changes in Emissions for PSD Pollutants (Tons/Year)

Pollutant	Project Emissions	Contemporaneous Emissions Increases and Decreases			Net Change in Emissions	Major Modification Threshold
		Decrease: Shut Down of Lakeside Units[a]	Increases:			
			New Diesel Engines[b]	Proposed Spray Dry System[c]		
NO_x	1070	1,262	39.4	14.0	- 138	40
SO_2	2135	7,741	0.8	0.1	- 5605	40
CO	1282	32.1	4.7	21.1	1276	100
VOM	38	7.03	1.0	11.6	43.6	40
PM/PM_{10}[d]	157/403	6.36	1.1	13.7	165/411	25/15
Sulf. Acid Mist	53	32.2	-	-	20.8	7
Fluorides[e]	2.6	[(f)]	-	-	2.6	3.0
Lead	0.22	[(f)]	-	-	0.22	0.60

Notes:

a. The emission decrease reflects actual emissions from shutdown of the existing Lakeside Units (Units 7 and 8), as addressed by this permit.

b. Permitted emissions of three diesel engines, as installed pursuant to Construction Permit 01070019.

c. Permitted emissions of the proposed spray dryer system, as currently requested by CWLP in Construction Permit Application 05030023.

d. Net change evaluated in terms of filterable PM/PM_{10}

e. Emissions of fluorides in terms of hydrogen fluorides.

f. CWLP did not quantify decreases in emissions of fluorides or lead from the shutdown of the Lakeside Units.

ATTACHMENT 3: STANDARD PERMIT CONDITIONS

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Environmental Protection Agency to impose conditions on permits, which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.

2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Illinois EPA and a supplemental written permit issued.

4. The Permittee shall allow any duly authorized agent of the Illinois EPA upon the presentation of credentials, at reasonable times:

    a. To enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,

    b. To have access to and to copy any records required to be kept under the terms and conditions of this permit,

    c. To inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,

    d. To obtain and remove samples of any discharge or emissions of pollutants, and

    e. To enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. Shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located,

   b. Does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities.

   c. Does not release the Permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations.

   d. Does not take into consideration or attest to the structural stability of any units or parts of the project, and

   e. In no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Illinois EPA before the equipment covered by this permit is placed into operation.

 b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.

7. The Illinois EPA may file a complaint with the Board for modification, suspension or revocation of a permit.

   a. Upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed, or

   b. Upon finding that any standard or special conditions have been violated, or

   c. Upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.

ATTACHMENT 4:

DETERMINING THE SORBENT INJECTION RATE FOR
CONTROL OF MERCURY EMISSIONS FROM THE AFFECTED BOILER

1. Purpose

This attachment contains the requirements for the sorbent injection system for control of mercury emissions from the affected boiler if the boiler is subject to Condition 2.1.2(c)(i)(A) and the Permittee elects to comply with Permit Option B, i.e., use of a control system for mercury emissions. Among other matters, this attachment defines the process by which the applicable injection rate of sorbent for such system will be determined.

2. General Requirements

a. The sorbent injection system, including the selected sorbent(s) shall be designed, constructed and maintained in accordance with good air pollution control practices. For this purpose, sorbent(s) shall be used, such as treated activated carbon, that have been demonstrated to have high levels of effectiveness in similar boiler/control device applications (or pilot tests on the affected boiler). The system shall have ample capacity to handle and inject such sorbent(s), and the location, number and type of injection ports designed for effective distribution of sorbent in the flue gas. The Permittee shall submit a demonstration to the Illinois EPA showing that the proposed sorbent injection system meets these criteria, for review and approval by the Illinois EPA.

b. i. The sorbent injection system shall each be operated to inject sorbent at a rate, in lb/million Btu or lb/scf of flue gas, that is at least at the rate that has been determined to represent the maximum practicable degree of removal for mercury, as previously established pursuant to an evaluation of the effectiveness of the sorbent for control of mercury conducted in accordance with Condition 3 or 4, below. This rate shall be maintained while coal is being fired in the boiler, including periods of startup and shutdown of the boiler.

ii. Notwithstanding the above, for purposes of evaluating the performance of sorbent(s), the Permittee may operate without the sorbent injection system in service or at low rates of sorbent injection as necessary to (1) to prepare for the formal evaluation of a sorbent, i.e., flushing residual sorbent from the boiler and control train, and (2) determine the “performance curve”, provided that the number and duration of such operation is minimized to the extent reasonably necessary for this purpose. (Refer to Paragraph 5(a), below, for the definition of the performance curve.) The Permittee may also conduct pilot tests to confirm

suitability of a potential sorbent prior to a detailed evaluation, with prior notification to the Illinois EPA describing such tests and the available data indicating the suitability of the sorbent material for effective control of mercury.

3. Initial Evaluation of the Effectiveness of Sorbent Injection and Establishment of the Optimum Sorbent Injection Rate

a. The Permittee shall perform an evaluation of the effectiveness of injecting sorbent(s) for control of mercury in accordance with a plan submitted to the Illinois EPA for review and comment.

i. The Permittee shall submit the initial plan to the Illinois EPA no later than 180 days after initial start-up of a boiler.

ii. The Permittee shall promptly begin this evaluation after the boiler demonstrates compliance with all applicable short-term emission limits as shown by emission testing and monitoring. At this time, the Permittee shall submit an update to the plan that describes its findings with respect to control of mercury emissions during the shakedown of the boiler, which highlights possible areas of interest for this evaluation.

iii. This evaluation shall be completed and a detailed written report submitted to the Illinois EPA within two years after the initial startup of the boiler. This report shall include proposed injection rate limit(s) for mercury emissions. (See Condition 3(d)(i), below.)

iv. This deadline may be extended by the Illinois EPA for an additional year if the Permittee submits an interim report (1) demonstrating the need for additional data to effectively evaluate sorbent injection and (2) includes an interim limit for mercury injection that provides effective control of mercury.

b. i. If the Permittee is conducting monitoring for mercury emissions with a continuous method, the plan shall provide for systematic review of mercury emissions as related to variation in operation of the boiler, within the normal range of boiler operation, including the effect of (1) boiler load and combustion settings, including excess oxygen, (2) operating data for the SCR system, including the level of uncontrolled NO_x before the SCR, as predicted from boiler operating data, (3) operating data for the scrubber, including pH of the scrubbant, and (4) operating data for the wet WESP. As an alternative to reliance on the measurements from a continuous monitoring system, the Permittee may also supplement its monitoring with semi-continuous monitoring, as provided below.

ii. If the Permittee is conducting monitoring for mercury emissions with a semi-continuous method, the sampling periods shall be of an appropriate duration to cover a representative selection of operation of the boiler.

c. In conjunction with such measurements of mercury emissions, the Permittee shall sample and analyze the fuel supply to the boiler so that representative data for the mercury content of the fuel supply is available that correlates with emission measurements.

d. i. Unless the Permittee elects to conduct a supplementary investigation, as provided below, the maximum practicable degree of removal shall be injection of sorbent at a rate that is twice the rate at the "transition point" from the performance curve. (Refer to Paragraph 5(b), below, for the definition of the transition point.) The sorbent injection system shall be operated at this rate.

ii. The Permittee may elect to conduct a supplemental investigation of the effectiveness of injection of sorbent(s) to determine whether effective control of mercury, as generally required, is achieved with lower (or higher) injection rates considering the operating rate or other relevant operating parameters of the boiler or control train, excluding periods of startup and shutdown of the boiler. For this purpose, the Permittee shall conduct additional measurements and develop additional performance curves for the control of mercury emissions for the boiler under such operating conditions. In the report for the evaluation, the Permittee shall explain why such operating conditions affect the control of mercury emissions, provide the criteria for identification of such operating conditions, and identify the rates at which the sorbent injection system must be operated during such conditions, determined as twice the rate at the "transition point" on the applicable performance curve.

4. Subsequent Evaluation of the Effectiveness of Sorbent Injection and Adjustment of the Optimum Sorbent Injection Rate

a. The Permittee shall repeat the evaluation described in Condition 3, above, in the following circumstances:

i. If the initial evaluation of sorbent injection does not demonstrate that 90 percent or more overall control of mercury will be achieved, a new evaluation shall be commenced two years after the initial evaluation was completed.

ii. If the Permittee undertakes significant changes to the mercury control system, e.g., use of a different sorbent or changes in the location or type of injection ports, at the conclusion of such changes.

iii. If the Permittee undertakes significant changes to other devices in the control train, e.g., use of a different catalyst in the SCR or changes in the chemistry of the scrubber which would generally act to reduce the effectiveness of those devices in controlling or facilitating the control of mercury emissions, at the conclusion of such changes.

iv. If requested by the Illinois EPA for purposes of periodic confirmation of the effectiveness of sorbent injection, which request shall not be made more than once every five years.

v. If the Permittee elects to perform such evaluation, provided, however that the Permittee shall explain why such an evaluation is being undertaken if it is less than two years after completion of the last evaluation.

b. For the purpose of subsequent evaluation, the plan shall be submitted to the Illinois EPA for review and approval at least 45 days before undertaking changes that trigger the need to perform such an evaluation and the evaluation shall be completed in one year, with opportunity for a 6-month extension.

c. As a subsequent evaluation reassesses the continuing operation of the boiler or addresses the future operation of the boiler, the results of the evaluation shall supersede the results of the preceding evaluation and thereafter govern the operation of the sorbent injection system. For example, if the subsequent evaluation was performed for a new sorbent material and the boiler continue to be operated with such sorbent, operation shall be governed by the results of the subsequent evaluation. If the new sorbent will not continue to be used, operation shall be governed by the results of the preceding evaluation for the sorbent material that will be used.

5. Definition of the Term "Performance Curve" As Related to Sorbent Injection for Control of Mercury Emissions

The "performance curve" is a graphical representation of the effectiveness of a particular sorbent in controlling mercury emissions, comparing the effectiveness of control with increasing rates of sorbent injection.

A performance curve for injection of a particular sorbent material is established by conducting a series of tests under representative operating conditions of the boiler to measure mercury emissions at different rates of sorbent injection (typically starting from zero sorbent to high rates of sorbent injection). For the purpose of presenting data, mercury emissions and sorbent injection rates are expressed in terms of the heat input to the boiler, in million or trillion Btu. This accounts for any differences in the heat input during each test.

ATTACHMENT 5

REQUIREMENTS PURSUANT TO AN AGREEMENT BETWEEN
CWLP (THE CITY OF SPRINGFIELD) AND THE SIERRA CLUB

1. Introduction

The City of Springfield (the Permittee) and the Sierra Club have entered into an agreement for the proposed Dallman 4 project.

2. Definitions

The following definitions shall apply to Attachments 5.1, 5.2, 5.3, 5.4, 5.5 and 5.6:

a. "Dallman Unit 4 Online" means 180 days after required emissions testing for Dallman Unit 4 is performed and results are obtained indicating compliance with emissions limits.

b. "Environmental Initiatives Fund" means an internal CWLP account into which funds from the Wholesale Sales Environmental Set-aside will be placed to fund environmental initiatives.

c. "Native Load" means the amount of energy used to serve retail customers located in CWLP's service area.

d. "System" means, the following four coal-fired, electric utility steam generating Units:

- Dallman Generating Station in Springfield, Illinois - Unit 31 (also referred to as Dallman Unit 1);
- Dallman Generating Station in Springfield, Illinois - Unit 32 (also referred to as Dallman Unit 2);
- Dallman Generating Station in Springfield, Illinois - Unit 33 (also referred to as Dallman Unit 3);
- Dallman Generating Station in Springfield, Illinois - Unit 4.

e. "Wholesale Load" means all bulk power transfers to entities outside CWLP's service area.

ATTACHMENT 5.1:

ENERGY EFFICIENCY

1. Purpose

Energy efficiency and conservation measures are alternative measures for reducing the air pollution impacts associated with meeting the City's electrical needs. Accordingly, CWLP will expand its existing energy efficiency and demand side management programs to maximize energy conservation. CWLP will identify additional cost-effective, energy efficiency measures as discussed in this attachment.

2. Programs

CWLP will take the following actions:

- Increase advertising for CWLP energy efficiency and demand management programs including, but not limited to, its free home energy inspection services, heat pump program, and subsidized blower test service;
- Hire at least one employee with experience in commercial and industrial energy management to develop and implement commercial and industrial energy efficiency and demand management programs;
- Identify new programs and expand the services offered by the CWLP Energy Services office;
- Establish an internship program that allows one or more college students per semester for the next four years to obtain training through CWLP's Green Energy Program or the Energy Services Office; and
- Implement or expand at least three energy efficiency programs by the end of 2007.

4. Energy Efficiency Study

CWLP will complete an energy efficiency potential study. The purpose of the study will be to identify cost-effective energy efficiency and demand management programs in the CWLP service area. CWLP will spend up to $75,000 for the study. A Request for Proposal ("RFP") to conduct the study will be issued within 90 days of the issuance of an effective PSD permit for Dallman Unit 4. CWLP will select a qualified provider with the requisite experience. The study will be complete by June 30, 2007, or by such later date as agreed to by the Parties. The results of the study will be used in the development of additional energy efficiency and demand side management programs.

5. Funding

CWLP shall fund and allocate $400,000 annually for its energy efficiency and demand side management programs, beginning in 2007

through 2015, plus an additional amount equal to at least 50% of the revenue generated by the Wholesale Sales Environmental Set-aside, not to exceed an additional $1 million annually. CWLP shall spend all of the money allocated for energy efficiency and conservation under this section within 36 months of the money being allocated. CWLP may allocate additional monies to fund energy efficiency and demand side management as it deems necessary.

6. Energy Conservation

CWLP will implement energy conservation measures in Dallman Units 1 through 3. These projects will be initiated after the issuance of the Dallman Unit 4 construction permit. The anticipated completion date is the end of 2008.

7. Low Income Households and Senior Citizens

At least $150,000 of the funds available for energy efficiency annually will be dedicated to programs targeted to low-income households and senior citizens. These programs will include, but not be limited to:

i. Grants for HVAC efficiency measures and rebates;

ii. Lighting efficiency;

iii. Thermostat set back programs; and

iv. Redundant refrigerator rebate and removal

8. Community Participation

CWLP will provide for citizen input in its energy efficiency and demand side management programs, including expanding its existing website to include a section dedicated to updating residents on CWLP programs and opportunities for input. Specifically, CWLP will: 1) provide an opportunity for public review of the energy efficiency study RFP discussed above; 2) provide a 30 day public comment opportunity on the draft energy efficiency study; and 3) hold bi-monthly community briefing meetings starting 60 days after the issuance of the Dallman Unit 4 construction permit and continuing for 18 months. Thereafter, meetings will be held quarterly through 2015. The meetings will provide an opportunity for CWLP to update residents on its energy efficiency programs, its status implementing its emission reduction commitments, and to receive community feedback. CWLP will consider input received from citizens during these public meetings in developing and implementing energy efficiency and conservation programs.

ATTACHMENT 5.2:

COMMITMENT TO REDUCE CO_2 EMISSIONS FROM NATIVE LOAD PRODUCTION

1. Purpose

Measures to reduce carbon dioxide (CO_2) emissions from CWLP's System will mitigate the global warming impacts associated with Dallman Unit 4 and reduce other air pollution impacts associated with meeting the City's electricity demands. Accordingly, CWLP will reduce the CO_2 emission associated with its Native Load to 7% below 1990 CO_2 emissions levels by December 31, 2012 and remain below this level through December 31, 2015. The 1990 base CO_2 emissions level is 1,887,000 tons/year. 7% below 1,887,000 tons/year is 1,755,000 tons/year.

2. Method of Calculation

The following steps were used to calculate CO_2 emissions from the System. The same method shall be employed in the future to measure CWLP's progress in attaining its CO2 emission reductions targets.

1. CWLP averaged CEM heat input, SO_2, NO_x, and CO_2 data for 1996-1999 for each of the three CEMs: Dallman 3, Dallman 1 and 2, and Lakeside.) (1999 was the last year before the 31/32 scrubber was installed.).

2. CWLP gathered net generation data for 1990 through 2005 from plant production reports.

3. CWLP gathered heat input data from fuel burn from the plant production reports for 1996 through 2005.

4. CWLP calculated net heat rates in BTU/kWH for 1996-2005 by dividing heat input by net generation. The average net heat rates in BTU/kWH calculated were 10,937 for Dallman 3, 11,873 for Dallman 1 and 2, and 13,334 for Lakeside. Thus, Dallman 3 was 7.88% more efficient than Dallman 1-2 and 17.98% more efficient than Lakeside.

5. CWLP compared heat inputs from CEM data to heat inputs from the plant production reports based on fuel burned during the 1996-2005 period.

6. Heat inputs from CEMs were, on average, 19.5% high for Dallman 3, 8.9% high for Dallman 1 and 2, but only 5.0% high for Lakeside than actual fuel burn from plant production reports during the 1996-2005 period.

7. Since Lakeside's CEM was the most accurate, the average CO_2 emission rate for Lakeside of 1.44 ton/net MWH was presumed to be accurate and the Lakeside CEM CO_2 emissions data was used directly and not adjusted.

8. The CO_2 emissions for Dallman 1 and 2 and Dallman 3, however, were not used because of the high "CEM bias" stated in Item 6.

9. Instead, to account for actual efficiencies of the units calculated in Item 4, CO_2 rates were calculated for Dallman 1 and 2 and Dallman 3 by multiplying the units' heat rate ratio with Lakeside by the Lakeside CEM CO_2 rate of 1.44 ton/MWH. The CO_2 emission rates calculated in this manner were 1.28 ton/MWH for Dallman 1-2 and 1.18 ton/MWH for Dallman 3. Thus, the CO_2 rates compared well with the actual and relative efficiencies of the units.

10. The 1990 CO_2 emissions were then calculated by multiplying the actual net generation from each unit by the corresponding CO_2 emission rates for each unit from Item 9.

11. The amount of generation for native energy for each unit was determined by taking the ratio of native energy to total generation. The amount of generation for wholesale sales was determined by taking the ratio of wholesale sales to total generation.

12. In this way, 1990 CO_2 emissions were calculated to be 1,887 thousand tons for native energy and 166 thousand tons for wholesale sales. Total 1990 CO_2 emissions were thus 2,053 thousand tons.

Determination of Native Energy

CWLP's native energy use is determined by the following formula:

Native Energy = Net Generation + Purchases – Wholesale Sales

CWLP has revenue quality rotating kilowatthour meters on each of its generators and on its five tie lines. This makes for a very accurate determination of native energy. Native energy differs from actual retail sales since losses are included. CWLP's total losses are on the order of 5.3 percent.

3. Government Regulation

If, before December 31, 2015, the federal government and/or the State of Illinois promulgates a CO_2 reduction program that is equivalent to or more stringent than the native emissions target set forth in this attachment, CWLP's CO_2 reduction obligations under this attachment would cease, and CWLP would be obligated to adhere to the applicable regulatory requirements. Absent a federal or state requirement to reduce CO_2 emissions, CWLP's obligation to reduce CO_2 emissions shall end on December 31, 2015.

4. Remedies

In the event CWLP is unable to meet an interim CO_2 native emissions target of 1,950,000 tons by June 30, 2011, based on the prior twelve

months' emissions, the sole remedy shall be for CWLP to pay into the Environmental Initiatives Fund ("Fund") $3 per ton of CO_2 by which CWLP exceeds 1,950,000 tons. If, by December 31, 2012, CWLP has not met its CO_2 native emissions target of 1,755,000 for calendar year 2012, the sole remedy shall be for CWLP to pay into the Environmental Initiatives Fund $3 per ton of CO_2 by which CWLP exceeds 1,755,000 tons. In the event that CWLP has still not met its annual CO_2 native emissions target of 1,755,000 tons by December 31, 2013, CWLP shall pay into the Fund $4 per ton by which CWLP exceeds 1,755,000 tons of CO_2. In the event that CWLP has still not met its annual CO_2 native emissions target of 1,755,000 tons by December 31, 2014, CWLP shall pay into the Fund $4 per ton by which CWLP exceeds 1,755,000 tons of CO_2. In the event that CWLP has still not met its annual CO_2 native emissions target of 1,755,000 tons by December 31, 2015, CWLP shall pay into the Fund $4 per ton by which CWLP exceeds 1,755,000 tons of CO_2. Any monies remaining in the Fund as of December 31, 2015 shall be utilized by CWLP to further reduce CO_2 emissions and shall be spent by December 31, 2016. Any monies CWLP pays into the Fund pursuant to this paragraph will be used to achieve CO_2 reductions, and may include purchasing additional wind energy and funding additional energy efficiency measures.

5. Independent Consultation

If CWLP has failed to reduce CO_2 emissions limits to 1,755,000 tons by December 31, 2013, within 60 days of January 1, 2014, CWLP shall retain an independent expert, who, no later than June 1, 2014, shall assist CWLP, in consultation with the public, in determining the most effective way to use the monies paid into the Environmental Initiatives Fund to attain the CO_2 native emissions target of 1,755,000 tons as expeditiously as possible.

ATTACHMENT 5.3:

COMMITMENT TO PROMOTE RENEWABLE ENERGY

1. Purpose

Purchasing wind power is a cost-effective measure to mitigate the global warming and other air pollution impacts associated with the construction of Dallman 4 and the production of electricity for the City's customers. Accordingly, CWLP will purchase at least 120 MW of wind capacity at a reasonable price under a Power Purchase Agreement. A reasonable price is equal to the accepted market price for wind capacity.

2. Request for Proposal

CWLP will issue a Request for Proposal ("RFP") for the acquisition of a minimum of 120 MW of wind capacity within 15 days of the issuance of this permit. The Power Purchase Agreement ("PPA") shall be for a term of not less than ten years. If a proposal for the procurement of at least 120 MW of wind capacity is rejected, CWLP will issue another RFP within 60 days of rejecting the original proposal(s). If an executed contract between CWLP and a wind generator cannot be performed shortly thereafter, CWLP will issue a new RFP within 60 days of the notice of breach or non-performance.

3. Alternative Procurement

After CWLP has issued two RFPs unsuccessfully, CWLP shall enter into a contract to build a minimum of 120 MW of wind capacity or have purchased 120 MW of wind turbines no later than June 1, 2010 and shall be receiving wind power from at least 120 MW of installed wind capacity no later than December 1, 2011. If CWLP is able to obtain wind capacity through a power purchase agreement before June 1, 2010 (for at least ten years), CWLP has no obligation to build or purchase turbines to provide its own wind capacity.

4. Additional Increments

CWLP will establish a green-pricing program that offers its retail customers the opportunity to buy incremental amounts of wind energy to meet their electrical needs. If CWLP sells 40 MW of wind energy to its retail customers through a green-pricing program, CWLP will purchase an additional increment of 20 MW wind capacity. Thereafter, for each additional 20 MW of wind energy CWLP sells to its retail customers through a green-pricing program CWLP will purchase an additional increment of 20 MW wind capacity.

5. Resale

CWLP may offer for resale wind capacity to other wholesale entities. At all times CWLP will maintain at least 100 MW of wind capacity for its retail customers.

6. Green Energy Program

CWLP will commence a Green Energy Program within 6 months after receipt of a final and effective PSD permit for Dallman Unit 4. CWLP will retain one or two full-time employees for this program. This program may include the following items:

i. Marketing to government institutions to use renewable energy.

ii. Marketing renewable energy to CWLP's residential customers, including providing the opportunity for customers to purchase either a portion or all of their generation needs with renewable energy at cost.

iii. Marketing renewable energy to CWLP's commercial electric customers, including a marketing feature they can display and utilize in their public relations and advertising efforts.

iv. Expanding educational opportunities through the green power office and offering green energy credit certificates for sale to customers.

ATTACHMENT 5.4:

WHOLESALE SALES: PERFORMANCE RESTRICTIONS AND ENVIRONMENTAL SET-ASIDE

1. Purpose

CWLP supplies energy both to its own local customers and to purchasers of energy outside of CWLP's service area. The energy used to provide electricity to the customers in CWLP's service area is referred to as Native Load. Energy sold as bulk power transfers outside of CWLP's service area is referred to as Wholesale Load. CWLP recognizes the need to mitigate the carbon dioxide and other criteria pollutant emissions created as a result of the generation of Wholesale Load. To this end, CWLP agrees to curtail its production of Wholesale Load. In addition, CWLP will mitigate the carbon dioxide and criteria pollutant emissions from its Wholesale Load production by dedicating funds to demand-side energy efficiency and conservation efforts directed at customers in its service area based on the amount of carbon dioxide generated by producing Wholesale Load.

2. Production Limitations.

CWLP will limit the use of Dallman Units 1 through 3 such that the units will not operate at their maximum capability (also referred to as emergency load levels) 99% of the time, restricting the use of the units to the following levels:

i. Dallman 3 – 170 MW net (4.12% reduction from full/emergency load levels)

ii. Dallman 2 – 70 MW net (11.43% reduction from full/emergency load levels)

iii. Dallman 1 – 70 MW net (11.43% reduction from full/emergency load levels).

3. Reservation of Right

CWLP may operate Dallman Units 1-3 at a higher capacity for performance and testing related to regulatory compliance as required and in emergency situations where it is called upon to generate additional power by MISO or other authority charged with responsibility for the security of the bulk power system to meet regulatory requirements or to fulfill obligations related to power system reliability.

4. Environmental Initiatives Fund

CWLP will create and maintain a segregated account, referred to as the Environmental Initiatives Fund, into which CWLP will deposit monies dedicated to energy efficiency, conservation, purchase of renewable energy, and other expenses associated with reducing or mitigating the environmental impacts associated with the production of energy from coal.

5. Wholesale Sales Environmental Set-Aside

Beginning after Dallman Unit 4 Online, CWLP will dedicate funds at a rate of $4.80 per ton of CO_2 emitted due to the production of energy for sale as wholesale energy and deposit such funds on an ongoing basis into the Environmental Initiatives Fund. CWLP will use at least 50% of the revenue generated by the Wholesale Sales Environmental Set-aside, not to exceed an additional $1 million annually, to fund demand-side energy efficiency and conservation efforts directed at CWLP's customers within its service area. The remaining revenue generated from the Wholesale Sales Environmental Set-aside may be used for the same purposes or for the purchase of wind and other renewable energy sources (including solar), equipment modification, and other expenses associated with increasing the efficiency or otherwise reducing emissions associated with the production of energy from Dallman Units 1 through 4.

ATTACHMENT 5.5:

EMISSIONS LIMITATIONS FOR DALLMAN UNITS 1 THROUGH 4: NO_x, SO_2, AND MERCURY

1. Purpose

On a System basis, CWLP will adhere to emissions limits for NO_x, SO_2, and Mercury as specified in this Attachment. The NO_x, SO_2, and mercury emissions limits applicable to the System are based on a rolling twelve-month average.

2. NO_x

The System emissions limit for NO_x will be 0.12 lb/million Btu between Dallman Unit 4 Online and December 31, 2012, and 0.07 lb/million Btu beginning January 1, 2013.

3. SO_2

a. General

The System emissions limit for SO_2 will be 0.24 lb/million Btu between Dallman Unit 4 Online and December 31, 2012 and 0.1 lb/million Btu beginning January 1, 2013.

b. Independent Evaluation

The System limits for SO_2 apply at all times, unless during the period between Dallman Unit 4 Online and December 31, 2010, CWLP finds that meeting the above SO_2 System emission limits requires measures on the Dallman Unit 3 scrubber beyond those recommended by the manufacturer and according to standard industry practice. If CWLP makes such a determination, CWLP and the Sierra Club will select an independent expert to evaluate all the units. The expert's evaluation will be for the purpose of determining the lowest SO_2 emission level that is practical and feasible for the Dallman 1 through 4 scrubbers. The independent expert will be agreed upon by both parties. CWLP will submit the names and qualifications of three candidates, and the parties will confer and choose the expert. If the independent expert determines that Dallman Units 1 through 4 cannot operate at a level that allows the System to meet the above SO_2 System emissions limits because of the performance of Dallman Unit 3, the expert will then determine the maximum achievable reduction level at which it is feasible for Dallman Unit 3 to operate year-round and CWLP will operate that scrubber at that level. If the independent expert determines that the Dallman Unit 3 is interfering with the System meeting the above-referenced System emissions limits, CWLP agrees to purchase and/or retire SO_2 credits equal to the difference between the System limits and the Dallman Unit 3 performance. If the independent expert agrees that the SO_2 performance for Dallman Unit 3 does not allow the System to meet the above-referenced emissions limits, the emissions from Dallman Units 1, 2, and 4

will be averaged, and will, as a group, perform at the above System limits for SO_2.

4. Mercury

a. Limit

In addition to other requirements regulating mercury emissions in the permit, on a 12-month rolling average basis beginning with Dallman Unit 4 Online, the emissions limit for mercury averaged across Dallman Units 1 through 4 shall be 0.008 lbs/GWh or 90% reduction of the mercury in the coal.

b. Prohibition on Sale of Mercury Credits

If a trading program for mercury is established, CWLP shall not sell any mercury credits generated by its mercury reduction.

ATTACHMENT 5.6:

ALTERNATIVE EMISSIONS LIMITS AND REQUIREMENTS FOR NEW DALLMAN UNIT 4 (THE AFFECTED BOILER)

The Permittee has voluntarily accepted the following emission limits and requirements for the affected boiler pursuant to an agreement with the Sierra Club.

1. Applicable Emissions Limits and Related Provisions for the Affected Boiler

a. Mercury

On a 12-month rolling average basis, 0.008 lbs/GWh or 90% reduction from input mercury.

b. Total Particulate Matter (Total PM)

i. 0.020 lb/million Btu on a three-hour block average.

ii. The limit for total PM may be lowered (no lower than 0.018 lb/million Btu) if the Illinois EPA, after considering the results of any evaluation performed by the Permittee, finds that the affected boiler can and should be able to consistently comply with such limits without unreasonable consequences.

c. Filterable Particulate Matter (Filterable PM)

0.010 lb/million Btu on a three-hour block average, provided, however, that if the affected boiler fails to comply with this emissions limit despite using all reasonable efforts during the first twenty-four months of operation post the affected boiler online, the Permittee shall petition Illinois EPA for a higher limit, but no higher than 0.012 lb/million Btu on a three-hour block average.

d. Sulfuric Acid Mist

0.004 lb/million Btu on a three-hour block average.

e. Opacity

10 percent.

f. Nitrogen Oxides (NO_x)

i. 0.05 lb/million Btu, on a 30-day rolling average, exclusive of startup, shutdown, and malfunction.*

ii. 0.06 lb/million Btu on a 30-day rolling average, inclusive of startup, shutdown, and malfunction.*

g. Sulfur Dioxide (SO_2)

The following minimum removal efficiencies for emissions of SO_2, with removal efficiency measured across the scrubber:

i. 99 percent removal on a 30-day rolling average, exclusive of startup, shutdown, and malfunction.*

ii. 98 percent removal on a 30-day rolling average, inclusive of startup, shutdown, and malfunction.*

* The terms startup, shutdown, and malfunction shall have the same meaning as those terms are used elsewhere in the permit.

2. Requirement for Shutdown of the Lakeside Units

Upon receipt of results indicating that the affected boiler complies with the permitted emission limits, Lakeside Units 7 and 8 (the Lakeside Generating Station) will be shut down.

3. Prohibition on Sale of Mercury Credits

If a trading program for mercury is established, the Permittee shall not sell any mercury credits generated by its mercury reduction.

SRS:CRR:psj

Exhibit 3

KANSAS
DEPARTMENT OF HEALTH
AND ENVIRONMENT
Division of Environment

Mark Parkinson, Governor
John W. Mitchell, Acting Secretary

www.kdheks.gov

AIR EMISSION SOURCE CONSTRUCTION PERMIT

Source ID No.:	0550023
Effective Date:	December 16, 2010
Source Name:	Holcomb Station
NAICS:	221112, Fossil fuel power generation (SIC 4911)
Site Location:	S32, T24S, R33W, Holcomb, KS
Site Owner/Operator Name:	Owners (as described below): Holcomb 2, LLC (f/k/a/ Sand Sage Power, LLC) Operator: Sunflower Electric Power Corporation (Sunflower)
Site Owners/Operators Mailing Address:	Sunflower Electric Power Corporation 301 West 13th Street Hays, KS 67601
Contact Person:	Mr. Wayne Penrod Executive Manager, Environmental Policy Telephone Number (785)623-3313

This permit is issued pursuant to K.S.A. 65-3008 as amended.

Description of Activity Subject to Air Pollution Control Regulations

The operator, Sunflower Electric Power Corporation (Sunflower), on behalf of the owners seeks authorization to construct and operate one new 895 (nominal[1]) megawatt (895 MW) coal-fired generating unit and associated equipment, including one steam generator (H2), one companion cooling tower, one auxiliary boiler, one emergency diesel power generator, one replacement diesel fire pump (DFP) to replace an existing emergency diesel fire pump at Holcomb 1, one emergency DFP booster pump and coal, lime, powdered activated carbon (PAC), and waste powder handling equipment, collectively known as the Holcomb Expansion Project (Project) or Holcomb 2, to be located at the site of the existing Holcomb 1 generating unit and associated equipment at Sunflower's Holcomb Generating Station.

During construction, the operator or the owner's constructor is authorized to bring on site and operate such temporary engines as are necessary to support construction activities. All engines will be certified pursuant to the applicable stationary engine standards and will be removed at the completion of construction activities. During construction the auxiliary boiler is authorized to be utilized without the fuel consumption limitation that otherwise applies in this permit. Temporary certified continuous emission monitoring systems (CEMs) will be used to monitor auxiliary boiler emissions during the construction period.

Sunflower will operate the H2 and the auxiliary and ancillary facilities and equipment to be constructed under this permit. Sunflower will operate, or will otherwise be responsible for the operation of any temporary equipment when Holcomb 2 is under construction.

Holcomb 2 will utilize most of the material handling equipment that was installed with Holcomb 1. A new coal conveyor and crusher system will be installed which will serve Holcomb 2. Some cross connection with the existing coal handling systems is anticipated. A new waste powder (flyash and scrubber reactants) storage system will be installed for Holcomb 2. All new auxiliary equipment will be designed and installed in accordance with appropriate New Source Performance Standard (NSPS) regulations. New material handling equipment associated with this permit will likewise be designed and installed in accordance with NSPS standards.

Holcomb 2 will be subject to the requirements of 40 CFR 52.21, Prevention of Significant Deterioration (PSD) as adopted under K.A.R. 28-19-350. The project consists of one new unit at an existing source for which at least one regulated pollutant is emitted in excess of the PSD significant emission levels. The coal-fired steam generator will be subject to the requirements of 40 CFR Part 60, Subpart Da, Standards of Performance for Electric Utility Steam Generating Units for which Construction Commenced after September 18, 1978; to such revisions promulgated on May 18, 2005 when construction commences after January 30, 2004; and to such final revisions for PM, SO_2, and NO_X where construction commences after February 27, 2006. The coal handling system additions will be subject to the requirements of 40 CFR Part 60, Subpart Y, Standards of Performance for Coal Preparation Plants. The auxiliary boiler will be subject to the requirements of 40 CFR Part 60, Subpart Db, Standards of Performance for

[1] Approximate size of the generating unit, not a reference to gross or net capacity.

Industrial-Commercial-Institutional Steam Generating Units. The replacement emergency DFP, the emergency DFP booster pump, and the emergency diesel power generator are subject to 40 CFR 60 Subpart IIII Standards of Performance for Stationary Compression Ignition Reciprocating Ignition Internal Combustion Engines, and to the area source requirements at 40 CFR 63 Subpart ZZZZ National Emission Standards of Performance (NESHAPS) for Stationary Reciprocating Internal Combustion Engines (RICE). The Holcomb 2 is an affected source subject to Title IV of the federal Clean Air Act.

The monitoring systems, as required by Title IV and other applicable regulations, may be used to satisfy some of the monitoring requirements of 40 CFR Part 60, Subpart Da as specified therein.

Emissions of oxides of nitrogen (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), volatile organic compounds (VOC), particulate matter (PM), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and sulfuric acid mist (H_2SO_4) were evaluated for this permit review. This project is subject to the provisions of K.A.R. 28-19-300 (Construction permits and approvals; applicability) because the H2 has the potential-to-emit NO_X, CO, SO_2, VOC, PM, PM_{10}, $PM_{2.5}$, and H_2SO_4 in excess of 40, 100, 40, 40, 25, 15, 10, and 7 tons per year, respectively. The total emission of lead and fluorides from H2 is estimated to be below the annual significance thresholds.

The application of SO_2 and particulate matter BACT control technology on H2 also reduces the level of emissions of hazardous air pollutants (HAPs). Based upon testing on the similarly-equipped H1 source, there is no potential that H2, controls considered, will emit, during normal operation, startup, shutdown and maintenance activity, any single HAP in an amount equal to or greater than 10 tons annually or any combination in an amount equal to or greater than 25 tons annually. Compliance with the HAPs requirements in this permit will verify H2 is not a major source of HAPs and the provisions of Section 112(g)(2)(B) of the Clean Air Act do not apply.

Although mercury is a HAP subject to regulation under Section 112 of the Clean Air Act (CAA)[2] it is not regulated under 40 CFR Part 52, and therefore was not included in the PSD review. Emission of mercury is limited by state-only conditions in this permit. Emission limits will be met by blending various coals, or by the injection of powdered activated carbon (PAC) or other sorbent or both. PAC or sorbent injection equipment will be installed for the H2 steam generator.

An air dispersion modeling impact analysis, an additional impact analysis, and a Best Available Control Technology (BACT) determination were conducted as a part of the construction permit application process.

[2]Section 112(b) list, as of December 19, 2005, contains the current list of HAPs subject to regulation.

Significant Applicable Air Pollution Control Regulations

The main steam generator (H2), the auxiliary boiler, the coal handling equipment, the lime storage/handling systems, the waste powder handling systems, the PAC handling systems, the emergency power generator, H1 DFP pump, and the DFP booster pump, as permitted, and all temporary engines for construction purposes are subject to Kansas Administrative Regulations relating to air pollution control. The following significant air quality regulations were determined to be applicable to this source:

K.A.R. 28-19-11 Exceptions Due to Breakdown or Scheduled Maintenance – as applied to State regulations K.A.R. 28-19-30 through K.A.R. 28-19-32 and K.A.R. 28-19-650

K.A.R. 28-19-31 Emissions Limitations

K.A.R. 28-19-650 Opacity Requirements

K.A.R. 28-19-275 Special Provisions; Acid Rain Deposition

K.A.R. 28-19-300 Construction permits and approvals; applicability

K.A.R. 28-19-720 New Source Performance Standards, which adopts 40 CFR Part 60 Subpart IIII

40 CFR Part 60 Subpart Da-"Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978" as amended January 28, 2009

40 CFR Part 60 Subpart Y-"Standards of Performance for Coal Preparation Plants" as amended October 8, 2009

40 CFR Part 63 Subpart ZZZZ – "National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines" as amended March 3, 2010

40 CFR Part 60 Subpart Db – "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Unit" as amended January 28, 2009

Air Emission Unit Technical Specifications

The following equipment or equivalent is approved:

1. One coal-fired steam generator, equipped with low-NO_X burners, a separated over-fire air system (OFA) and a selective catalytic reduction (SCR) process to control NO_X emissions, dry flue gas desulfurization (dry FGD) to control SO_2, H_2SO_4, Hydrogen Chloride (HCl), and Hydrogen Fluoride (HF) emissions, and a dry fabric-filter system to control particulate emissions (PM, PM_{10}, and $PM_{2.5}$), lead, and H_2SO_4 emissions.

Activated carbon or sorbent injection, other technology, or fuel blending that achieves similar reduction effectiveness is to be used to control mercury emissions. Maximum design fuel input for the steam generator shall be 8,700 million BTUs per hour (mmBtu/hr) on an average annual basis. Maximum fuel sulfur content is to be 0.50 percent on an average annual basis. Fuel is to be Powder River Basin (PRB) sub-bituminous coal or other western coal.

2. Additions and improvements to the existing coal unloading, storage, handling, and feed system, if any, are to be designed to meet the requirements of 40 CFR Part 60 Subpart Y. All coal conveyors, except any unloading conveyors to storage pile drop points, will be enclosed to minimize the release of PM emissions. PM emissions from all drop points, including the primary coal crusher but excluding unloading conveyors to storage piles, will be captured and controlled by baghouse dust collectors. Wetting agents will be used on the coal pile and other locations, as necessary, to limit the release of fugitive emissions.

3. Additions and improvements to the existing ash transport, loading, storage, and handling systems, if any, are to be designed to meet the requirements of K.A.R. 28-19-650.

4. Additions and improvements to the lime unloading, storage, transfer, and preparation systems, if any, are to be designed to meet the requirements of K.A.R 28-19-650.

5. One auxiliary boiler sufficient to service Holcomb 2 shall be equipped with low-NO_X burners and flue gas recirculation (FGR). Maximum design heat input for auxiliary boiler is to be 200 mmBtu/hr. Fuel shall be pipeline quality natural gas.

6. One cooling tower sufficient to service the H2 unit is to be designed with efficient commercially available drift eliminators to reduce aerosol and particulate emissions from the tower.

7. One 1200 kW emergency generator (approximately 1709 horsepower) is to be equipped with a catalytic converter designed to meet the requirements of 40 CFR Part 60 Subpart IIII Interim Tier 4.

8. One 350 BHP diesel fire pump (DFP) booster pump for the H2 unit is to meet the requirements of 40 CFR Part 60 Subpart IIII Tier 3.

9. One replacement 350 BHP DFP for the existing fire protection system is to meet the requirements of 40 CFR Part 60 Subpart IIII Tier 3.

Air Emissions Estimates from the Proposed Holcomb Expansion Project

Pollutant Type	Post Permit Potential-To-Emit (Tons per Year)[3]
Nitrogen Oxides (NO_X)	1,910
Carbon Monoxide (CO)	4,579
Sulfur Dioxide (SO_2)	3,240
Volatile Organic Compounds (VOC)	119.4
Particulate Matter (PM)	512
Particulate Matter < 10 μ (PM_{10})	748
Particulate Matter < 2.5 μ ($PM_{2.5}$)	727
Elemental Lead	0.53
Sulfuric Acid Mist (H_2SO_4)	141
Mercury (Hg)	0.078
Any Single Hazardous Air Pollutant (HAP)	< 10
Total HAPs	< 25

Air Emission Limitations

Each emission limitation established or referenced in this permit applies to the respective emission source subject to that limitation at all times, including startup, shutdown, and malfunction, unless the applicability of that limitation is expressly excluded under certain conditions as to which a different limitation is applicable under a specific provision of this permit. The exceedance of any emission limitation established by or referenced in this permit may constitute a violation of the permit and may be subject to enforcement action.

1. Opacity limits:

   The requirement to continuously monitor the opacity of visible emissions from H2 does not apply because a continuous monitoring system (CMS) for PM is to be installed,

[3] Potential-to-emit estimates are based on operation at full capacity for 8760 hours per year while in compliance with all conditions of this permit.

calibrated, maintained, and operated to demonstrate compliance with filterable particulate matter emission limitation(s) in Air Emission limitation 2(c) below. This is "an other applicable regulation" provided in K.A.R. 28-19-650(a) and the exemption from opacity monitoring requirements is allowable at 40 CFR 60.42Da(b). (40 CFR 60.48Da(p)).

2. H2 steam generator:

On and after the required performance tests referenced in 40 CFR Part 60 and K.A.R. 28-19-212, the emission of each pollutant expressed as lbs/mmBtu or as lbs/MWh shall not exceed the limit referenced hereunder. Test requirements and compliance with this standard is described in the section entitled Compliance and Other Performance Testing.

NSPS standards referenced in 40 CFR Part 60, Subpart Da specify limitations to the emission of SO_2, NO_X, and PM from the steam generator. Because the limitations expressed in Conditions 2a, 2b, and 2c, are more restrictive than the NSPS requirements, those NSPS emission limitations are subsumed into the BACT emission limitations in this permit.

"Day" in the 30-day rolling average limits for NO_X , SO_2, CO and PM means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the steam generator. It is not necessary for fuel to be combusted the entire 24-hour period.

Specific definitions for startup and shutdown are defined within the context of the applied control technology. The owner or operator shall use good air pollution control practices to minimize emissions during startup and shutdown. Work practices shall include the use of natural gas as an ignition and flame-stabilization fuel, low sulfur solid fuels, combustion NO_X control technology, and placing in service of the specific control technologies in accordance with the respective manufacturers' recommendations.

a. The owner or operator shall not emit or cause to be emitted NO_X emissions exceeding 0.05 pounds per million BTU heat input (lb/mmBtu) on a 30-day rolling average basis, excluding periods of startup and shutdown.

NO_X emissions during startup and shutdown shall be controlled by the use of low-NO_X burners and a separated over-fire air system. Emissions during startup and shutdown shall be limited to an average of 1740 lb/hr as determined on each individual startup or shutdown event.

For NO_X only, startup begins with the introduction of fuel to the furnace and ends 2 hours after the SCR inlet temperature is above 650°F.

For NO_X only, shutdown begins when SCR inlet temperature decreases below 650°F in the course of removing the unit from service and ends when all fires are removed.

If the equipment vendor specifies a design temperature different than 650°F, then the startup and shutdown temperatures shall be subject to revision in coordination with KDHE.

b. The owner or operator shall not emit or cause to be emitted SO_2 emissions, as determined on a 30-day rolling average basis, in excess of the emission limitations over a 30-day period which is the rolling average of the following emission limitations:

i. 0.085 lb/mmBtu when scrubber inlet SO_2 is equal to or greater than 0.9 lb/mmBtu;

ii. 0.060 lb/mmBtu when scrubber inlet SO_2 is less than 0.9 lb/mmBtu;

iii. For each day in the 30-day rolling average computation, the emission limitation shall be established as the average of the applicable emission limitations, determined by the number of operating hours in each tier (defined by the scrubber inlet SO_2 concentration in pounds per million Btu).

Such limitations shall not apply during periods of startup and shutdown. Emissions during those periods shall be limited such that the 12-month rolling average emissions of SO_2 will not exceed 3239 tons.

For SO_2 only, startup begins with the establishment of coal fires and ends when fabric filter inlet temperature increases to 225°F. In no case shall scrubber operations commence before the fabric filter is placed in service.

For SO_2 only, shutdown begins when, in the course of removing the unit from service, the fabric filter inlet temperature decreases below 225°F and ends with the removal of fuel from the furnace.

If the equipment vendor specifies a design temperature different than 225°F, then the temperature shall be subject to revision in coordination with KDHE.

c. The owner or operator shall not emit or cause to be emitted filterable particulate matter (PM, filterable PM_{10} and filterable $PM_{2.5}$) emissions exceeding 0.012 lb/mmBtu on a 30-day rolling average basis.

Filterable particulate matter (PM[4]) emissions shall be controlled by the use of a fabric filter.

The owner or operator shall not emit or cause to be emitted filterable particulate matter (PM) emissions exceeding 0.015 lb/mmBtu on a 24-hour block average basis, excluding periods of startup, shutdown, and malfunction. [40 CFR 60.42Da(c)(2)]. Compliance with this provision shall be in accordance with the provisions of 40 CFR 60.48Da(p).

[4] The term "PM" as used in this permit means that particulate matter (existing as solid) emitted by a steam generator that can be quantified by analysis using USEPA-approved Reference Method 5.

The owner or operator shall use good air pollution control practices to minimize filterable particulate matter emissions during startup and shutdown of the steam generator. These practices shall apply to the fabric filter and shall include the use of natural gas as an ignition fuel and the placement in service and removal from service of the fabric filter in accordance with the manufacturers' recommendations consistent with long-term sustainable operation of the steam generator and the fabric filter.

For particulate matter only, startup commences with operation of induced draft and forced draft fans and ends when the fabric filter inlet temperature of 150°F is achieved. Shutdown commences when coal fires have been removed from the steam generator and the fabric filter inlet temperature drops below 150°F, and ends when all induced draft and forced draft fans have ceased operation. Fabric filters shall be in service whenever coal fires are present in the steam generators.

The owner or operator shall not emit or cause to be emitted total PM_{10}[5] emissions and total $PM_{2.5}$[6] emissions exceeding 0.018 lb/mmBtu unit averaged over six (6) runs of at least 120 minutes in duration. If the initial performance test demonstrates that the PM_{10} and/or $PM_{2.5}$ emissions limitation of 0.018 lb/mmBtu is not consistently achievable, the total PM_{10} and/or the total $PM_{2.5}$ emission limitation shall be 0.025 lb/mmBtu with such limitation being deemed to have applied since initial operations were commenced. Such limitation shall continue to apply until such time as the procedures identified in the paragraph below have been fully concluded.

If the initial performance test does not indicate that a total PM_{10} and/or $PM_{2.5}$ emission limitation of 0.018 lb/mmBtu is consistently achievable, then either the emission limitation indicated by the initial performance test, contingent upon approval by KDHE, shall be incorporated into a revised permit, or additional testing shall be accomplished (in accordance with "Compliance and Other Performance Testing" Paragraphs 9 and 10 below) to determine the revised emissions limitation. Additional testing, if done, shall be accomplished within 12 months from the date of completion of the initial performance test. Thereafter a

---

[5] The term "PM_{10}" as used in this permit means that particulate matter (existing as solid, liquid, and gaseous form) emitted by a steam generator that can be quantified by analysis using EPA Reference Methods 5 and 202 or by Methods 201A and 202 or by Other Test Method (OTM) 27 (with cyclone sizing devices appropriate for the quantification of PM_{10}) and OTM28 or other such USEPA-approved methods.

[6] The term "$PM_{2.5}$" as used in this permit means that particulate matter (existing as solid, liquid, and gaseous form) emitted by a steam generator that can be quantified by analysis using EPA Reference Methods 5 and 202 or by Methods 201 (or 201A) and 202 or by Other Test Method (OTM) 27 (with appropriate cyclone sizing devices appropriate for the quantification of $PM_{2.5}$) and OTM28 or other such USEPA-approved methods.

new total PM_{10} and/or $PM_{2.5}$ emissions limitation shall be determined by KDHE and incorporated into a revised permit, with such new emissions limitation to be deemed effective as of the date of the initial performance test. All emissions limitation determinations made by KDHE pursuant to this paragraph shall be subject to public notice and comment.

d. The owner or operator of the unit shall not emit or cause to be emitted from any unit Volatile Organic Compounds (VOC) emissions exceeding 0.003 lb/mmBtu, averaged over the period specified in the test protocol approved by KDHE.

e. The owner or operator of the unit shall not emit or cause to be emitted Carbon Monoxide (CO) emissions exceeding 0.12 lb/mmBtu, on a 30-day rolling average basis.

f. The owner or operator of the unit shall not emit or cause to be emitted total elemental Lead (Pb) emissions exceeding 14 lb/TBtu averaged over the period specified in the test protocol approved by KDHE.

g. The owner or operator of the unit shall not emit or cause to be emitted total sulfuric acid mist (H_2SO_4) emissions exceeding 0.0037 lb/mmBtu averaged over the period specified in the test protocol approved by KDHE.

h. Regardless of fuel type fired, emissions of mercury for the unit shall not exceed 0.020 lb/GWh as determined on a 12-month rolling average basis.

i. Emissions from Holcomb 2 shall not exceed 10 tons per year for any single Hazardous Air Pollutant (HAP), or 25 tons per year of any combination of HAPs in any consecutive 12-month period.

3. Coal System:

The owner or operator shall not emit or cause to be emitted visible emissions from any new or modified coal handling equipment exceeding 10 percent opacity, or visible emissions from any existing conveying equipment to or from any new or modified coal handling equipment, including the storage pile, exceeding 20 percent opacity. (40 CFR Part 60, Subpart Y).

4. Ash System:

The owner or operator shall not emit or cause to be emitted visible emissions from any new or modified ash system equipment to 20 percent opacity. (K.A.R. 28-19-650).

5. Lime System:

The owner or operator shall not emit or cause to be emitted visible emissions from any new or modified lime system equipment to 20 percent opacity. (K.A.R. 28-19-650).

6. PAC System:

The owner or operator shall not emit or cause to be emitted visible emissions from any new PAC system equipment to 20 percent opacity. (K.A.R. 28-19-650).

7. Cooling Tower:

The cooling tower for Holcomb 2 shall be equipped with commercially available high efficiency drift eliminators with a maximum total liquid drift not to exceed 0.0005 percent of circulating water flow rate. Compliance with this requirement is demonstrated by maintaining records of the vendor-guaranteed maximum total liquid drift. No chromium-based water treatment chemicals will be used in the circulating water system and thus the requirements of 40 CFR Part 63, Subpart Q shall not apply.

PM/PM_{10} emissions from each cooling tower shall not exceed 6.83 lb/hour. Total dissolved solids (TDS) in the circulating water shall not exceed 9,000 ppm by volume. The method of demonstrating compliance with the PM emission limit is limiting the TDS content of the cooling water.

$PM_{2.5}$ emissions from the cooling tower shall not exceed 4.1 lb/hour. Total dissolved solids (TDS) in the circulating water shall not exceed 9,000 ppm by volume. The method of demonstrating compliance with the PM emission limit is limiting the TDS content of the cooling water.

Permit Conditions

1. The pre-controlled emission rate of sulfur dixide (SO_2), as measured at the scrubber inlet shall not exceed 1.23 lbs SO_2/mmBtu on an average annual basis.

2. The owner or operator shall notify KDHE if the total NO_X emissions from H2 as measured by CEMS, and other Holcomb 2 sources, as estimated by emission factors, exceed the 1740 lb/hour action level modeled in the permit application, totaled over any one-hour period.

3. The owner or operator shall notify KDHE if the total SO_2 emissions from H2, as measured by CEMS, exceed the 4089 lb/hour action level modeled in the permit application, averaged over any one-hour period.

4. Coal handling equipment is subject to regulation under 40 CFR Part 60 Subpart Y, namely: coal processing and conveying equipment (including breakers and crushers); and coal storage systems (except for open storage piles). New coal handling equipment includes conveyors, a new crusher house, new transfer points and a new stacker/reclaimer system. The equipment, either newly constructed, or modified (if any), shall be enclosed and vented to a baghouse with a manufacturers' guarantee of 99% control efficiency. Emissions shall not exceed 0.005 gr/dscf from baghouses.

The owner or operator shall, prior to startup of the affected facility, submit a fugitive coal dust emission control plan in accordance with 40 CFR Part 60.254(c). Such control plan shall limit the opacity of visible emissions from each new unloading conveyor drop point to any new storage pile, the storage piles proper, from any storage pile, and from recovery operations to the reclaim systems.

5. Newly constructed or modified equipment for fly ash and lime systems, if any, shall be enclosed and vented to a baghouse or bin vent filter with a manufacturers' guarantee of 99% control efficiency. Emissions shall not exceed 0.005 gr/dscf from baghouses or bin vent filters.

6. Newly constructed or modified equipment for PAC systems shall be enclosed and vented to a baghouse or bin vent filter with a manufacturers' guaranteed of 99% control efficiency. Emissions shall not exceed 0.005 gr/dscf from baghouses or bin vent filters.

7. Baghouses and bin vent filters for the newly constructed or modified material handling equipment shall be in place and continuously operated, except during periods of malfunction, breakdown, or necessary repairs, to control emissions of PM and PM_{10}, and $PM_{2\,5}$ whenever the associated material handling equipment is in operation. Maintenance and repair of the baghouses and bin vent filters shall be conducted in a manner to minimize emissions.

8. The total fuel consumed in the auxiliary boiler shall not exceed 175,000 MCF/calendar-year. NSPS emission standard for NO_X referenced in 40 CFR Part 60, Subpart Db does not apply for boilers of less than 250 mmBtu/hr operated at an annual capacity factor of less than 10% (40 CFR 60.44b(k)) while firing natural gas. Should the owner or operator ever exceed the 10% annual capacity factor (uses more than 175,000 MCF/calendar year), the schedule for starting the initial performance test would commence as soon as the exceedance has occurred. BACT limits for the auxiliary boilers are as follows:

Pollutant	Limit (lb/mmBtu)
NO_X	0.036
CO	0.04
$PM_{10}/PM_{2\,5}$	7.6 lb/10^6 scf
VOC	0.005
SO_2	0.6lb/10^6 scf

9. The emergency diesel generator shall not be operated for more than 100 hours per year for testing and maintenance. Maintenance and testing hours of operation, except for necessary operational demonstrations to prove completion of maintenance, shall occur between 9:00 AM and 6:00 PM. Otherwise, the emergency diesel generator shall be used only to provide electricity to a specific essential Holcomb 2 plant distribution bus during periods requiring an alternative supply of electricity due to unavoidable loss of normal plant supply. Hours of use shall be verified by the use of non-resettable run time meters (RTM). Emission limitations for the emergency diesel generator are NSPS 40 CFR 60 Subpart IIII Interim Tier 4, as follows::

Pollutant	Limit (g/HP-hr)
NO_X	0.50
CO	2.6
$PM_{10}/PM_{2.5}$	0.10
VOC	0.5
SO_2	ULSD

10. The replacement diesel fire pump and the DFP booster pump each shall not be operated for more than 100 hours per year for testing and maintenance. Otherwise, the replacement diesel fire pump and the DFP booster pump each shall be used only to provide emergency fire protection water supply to the Holcomb site on occasions when the plant fire protection systems are activated and the plant electric fire pumps are inadequate to maintain fire header pressure. The replacement diesel fire pump and the DFP booster pump may be operated for up to 50 hours per year for maintenance operations and such hours will be included in the total 100 hours limitation. Hours of use shall be verified by the use of non-resettable run time meters (RTM). Emission limitations for both the replacement diesel fire pump or the DFP booster pump are NSPS 40 CFR Part 60 Subpart IIII Tier 3, as follows:

Pollutant	Limit (g/HP-hr)
NO_X	3.0
CO	2.6
$PM_{10}/PM_{2.5}$	0.15
VOC	0.3
SO_2	ULSD

11. Stack parameters for all equipment listed under Air Emission Unit Technical Specifications, including but not limited to stack heights, stack diameters, exhaust temperatures, emission rates, and exit velocities, shall be consistent with data provided for the dispersion modeling analysis. If significant changes are made, the facility shall document compliance with the NAAQS and increment to KDHE prior to making changes. KDHE has final authority in determining what is a significant change.

Compliance and Other Performance Testing

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up of the steam generator, the owner or operator shall conduct performance tests to demonstrate compliance with the applicable conditions and limitations for H2 set forth in this permit for SO_2, NO_X, CO, and PM, PM_{10}, and $PM_{2.5}$, and furnish KDHE a written report of the results of such performance test(s) within 60 days of said tests. CEMS shall be utilized to demonstrate compliance with the emission limitations for each of these pollutants following the initial performance test.

2. Compliance with the more stringent BACT limit(s) or other limits established in this permit shall be considered in compliance with any companion NSPS requirement. Failure to demonstrate compliance with a BACT limit is not a violation of NSPS limits unless the NSPS limit is exceeded. The PM NSPS 24-hour block average emission limitation is a stand-alone limit.

3. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up, the owner or operator shall conduct Method 9 performance test(s) to demonstrate compliance with the opacity limitations set forth for the new or modified coal, lime, PAC and ash handling equipment and shall furnish KDHE a written report of the results of such performance test(s) within 60 days of said test.

4. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up of H2, the owner or operator shall conduct performance test(s) to demonstrate compliance with the applicable conditions and limitations set forth in this permit for VOC, lead and H_2SO_4, and determine by correlation through such performance tests whether the CO, PM, and SO_2 CEMS, respectively, can be established as indicators of ongoing compliance for these pollutants. The owner or operator shall furnish to KDHE a written report of the results of such performance test(s) within 60 days of said test.

   If such correlation cannot be shown to exist for one or more pollutant(s), then continuing compliance will be assured for such pollutant(s) by annual stack tests. If correlation can be shown to exist, then continuing compliance with the 30-day requirements for CO, PM, and SO_2 will be an indication of ongoing compliance with VOC, lead, and H_2SO_4 limitations, respectively.

The owner or operator shall affirm such correlation as often as performance tests for the pollutants may otherwise be required. The cessation of the correlation of these tests for a specific pollutant shall occur at such time as the owner or operator shall install, calibrate, and operate CEMS for that specific pollutant, or at such time as the owner or operator shall petition KDHE to cease this requirement for a particular pollutant upon presentment of such adequate test information that such continued demonstration is no longer necessary for assured compliance with said emission limitation or limitations.

5. Within 180 days after initial start-up of the material handling equipment, an initial performance test is required for one bag house (or bin filter) in each of the four material handling systems (coal, ash, PAC and lime) so equipped. On-going compliance for these control devices can be assured by utilizing broken bag detectors and/or particulate monitors, by observing or annunciating pressure drop, or by periodic quantitative and qualitative observation, or by individual methods, or a combination thereof, as is appropriate for each type of material being handled and for the location in which it is installed. The owner or operator shall furnish to KDHE a written report of the results of the four (4) performance tests within 60 days of said tests and shall submit for KDHE approval the method of verifying on-going compliance for all the control devices in the material handling equipment.

6. Within 60 days after achieving the maximum production rate for the steam generator, but not later than 180 days after initial start-up, the owner or operator shall verify compliance with the cooling tower total dissolved solids concentration limit and shall furnish KDHE a written report of the results of the verification within 60 days of said test. For the six (6) months thereafter, the owner or operator shall perform monthly analyses to verify the limitation is not exceeded. Once this has been verified, the analyses shall be performed semiannually.

7. Continuous monitoring systems and monitoring devices required for the steam generator shall be installed and operational prior to conducting compliance performance tests under 40 CFR 60.8. Verification of operational status, at a minimum, shall include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the devices as required by 40 CFR 60.13.

8. In conducting the compliance performance tests required by this permit, the reference test methods and procedures outlined in K.A.R. 28-19-212 and 40 CFR 60.48Da shall be used to demonstrate compliance with the limitations and conditions set forth in this permit.

9. Within 120 days after completing the initial stack compliance tests required in paragraph 1 above, the owner or operator shall conduct a performance test of PM_{10} and $PM_{2.5}$ emissions and shall furnish KDHE a written report of the results of such test within 60 days of said test. If, after evaluating the test data, the report reasonably concludes that the emission limitation of 0.018 lb/mmBtu for PM_{10} and/or $PM_{2.5}$ in Condition 2.c. of the Air Emissions Limitations section above may not be achievable, then the owner or operator may perform additional testing to determine an emission limitation for PM_{10} and/or $PM_{2.5}$ with which the steam generator can consistently comply while operating in a manner of

good operating practices and regularly scheduled maintenance of the steam generator, pollution control equipment and ancillary equipment.

10. If the owner or operator requests that the PM_{10} and/or $PM_{2.5}$ emissions limitation be adjusted through additional testing, it shall include within the report required by Paragraph 9, a complete plan for establishing a PM_{10} and/or $PM_{2.5}$ measurement protocol, including the method(s), number of test runs, and a tentative timeline, not to exceed 12 months, necessary to establish by appropriate statistical methods, a new PM_{10} and/or $PM_{2.5}$ emissions limitation under the range of normal operating conditions. Such plan shall include a requirement for quarterly reporting; to include an analysis of test results, unit operating parameters, air pollution control device operating parameters, fuel conditions, and other such matters as might influence the test results.

    KDHE shall take measures to adjust the PM_{10} and/or $PM_{2.5}$ emissions limitation to that which is determined by the test results, as follows: KDHE shall establish a revision to the PM_{10} and/or $PM_{2.5}$ emissions limitation which:

    (i) ensures that there will be no exceedance of either the NAAQS or the PSD increment consumption allowance for PM_{10} and/or $PM_{2.5}$;

    (ii) is based upon an appropriate statistical analysis; and

    (iii) is consistently achievable on a sustained and long-term basis with the exercise of due care and good operating practices. All emissions limitation determinations made by KDHE pursuant to this paragraph shall be subject to public notice and comment.

11. The owner or operator shall evaluate the use of PM CEMS to determine whether any correlation may be established as an indication of compliance with total PM_{10} and total $PM_{2.5}$ emission limitations. In such determination the sulfate contribution to condensable formation will not be included in any calculation used to indicate compliance, nor shall the exceedance of the 24-hour PM CEMS NSPS limitation be credible evidence that a violation of either total PM_{10} or $PM_{2.5}$ limitations shall have occurred.

12. a. The owner or operator shall perform tests for HCl and for HF at the FGD inlet and the steam generator stack in accordance with the conditions indicated below. During each stack test series, coal samples conforming to ASTM D2234 shall be gathered for analysis. To the degree practicable the coal samples shall represent the coal combusted during the testing. Subsequent determination of chlorine and fluorine in the samples shall be made using methods identified in paragraph 4 of the Monitoring Requirements section of this permit.

b. The owner or operator shall perform tests for trace metals[7], cyanide (HCN), aromatic hydrocarbons[8], aldehydes[9], and dioxins/furans[10] at the stack in accordance with EPA-approved methods and with the provisions set forth below. During each stack test series, coal samples conforming to ASTM D2234 shall be gathered for analysis. To the degree practicable the coal samples shall represent the coal combusted during the testing. Because of the various methods to be utilized, these tests need not be concurrent, nor need they be concurrent with the HCl and HF testing.

13. HAPs testing shall be conducted at loads greater than 90% of the maximum production rate. Test results shall be the average of no fewer than three valid test runs. No less than 45 days prior to testing, the owner or operator shall submit to KDHE a complete written test plan, including the identification of those EPA-approved methods proposed, which plan shall be implemented unless disapproved by KDHE no later than 15 days prior to the commencement of testing. Test reports for HAPs shall be submitted to KDHE no later than 45 days following the completion of the testing.

a. The owner or operator shall conduct the first HCl and HF performance test within 90 days after achieving 90% of the maximum production rate.

b. The owner or operator shall conduct each subsequent HCl and HF performance test within 6 months following the previous performance test, except as such requirement is modified below.

c. If the results of four consecutive tests indicate that HCl emissions and HF emissions are below 1.83 lb/hr (209 lb/TBtu), then the subsequent testing frequency shall be within one year of the previous test.

d. If test results from the annual testing show HCl and/or HF emissions are greater than 1.83 lb/hr, then the six-month testing frequency shall resume.

e. If test results show stack HCl and/or HF emissions are greater than 1.83 lb/hr for any two tests in a rolling 24-month period, the owner or operator shall submit, as soon as practicable, a plan to KDHE for approval to install, calibrate, maintain and operate a continuous emission monitor (CEM) for HCl and/or HF.

---

[7] Defined for purposes of this permit as antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, and selenium, as determined by Method 26.

[8] Defined for purposes of this permit as benzene, toluene, ethyl benzene, xylenes utilizing a volatile organic sample train (VOST), with appropriate EPA-approved analytical methods.

[9] Defined for purposes of this permit as acetaldehyde, propionaldehyde, acrolien and formaldehyde as determined by CARB Method 430.

[10] Defined for purposes are those compounds that can be determined by EPA Method 23.

f. The owner or operator shall conduct the stack tests for trace metals, cyanide, aromatic hydrocarbons, and aldehydes within 90 days after achieving 90% of the maximum production rate.

g. The owner or operator shall conduct subsequent stack tests for trace metals, cyanide, aromatic hydrocarbons, aldehydes and dioxin/furans within five years following the previous performance test.

h. Within 180 days of commercial operation the owner or operator shall perform such functions as necessary to begin the demonstration of compliance with the limitations set forth in this permit for mercury. Such methods of compliance demonstration will include the EPA-approved sorbent trap method as identified at 40 CFR Part 60 Appendix B Performance Specification 12A or a CEMS system installed, maintained, calibrated, and operated in accordance with Performance Specification 12B, and/or with other EPA-approved methods as may be established.

Monitoring Requirements

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up of H2, the owner or operator shall install and operate a continuous monitoring system to monitor and record emissions of SO_2, NO_X, PM, and CO as required by 40 CFR 60.49Da and this permit.

2. All continuous monitoring systems required by 40 CFR Part 60 and this permit shall meet the applicable requirements of 40 CFR 60.13, Appendix B, and Appendix F for certifying, maintaining, operating and assuring quality of the systems, and, where applicable, with the requirements of 40 CFR Part 75.

3. Within 180 days after initial startup operation of the steam generator, the owner or operator shall install and operate a continuous monitoring system, either a CEMs or sorbent trap, to monitor and record emissions of mercury as required by this permit.

4. The owner or operator shall sample, prepare the sample, analyze, and record the chlorine and fluorine concentration in no less than one composite sample of the coal from each mine shipped for H2 in each calendar month. To the degree practicable each mine composite shall include an appropriate sample cut from each train shipped. Information recorded for each sample shall include the name of the coal supplier, train identification number, sample number, and laboratory performing the analysis. Appropriate affidavits or statements verifying that the methods used to sample, prepare and analyze the coal were performed in accordance with the following methods (or successor methods established by ASTM):

    a. sampling – ASTM Method D 2234
    b. preparation – ASTM Method D 2013
    c. chlorine content – ADTM Method D 6721
    d. fluorine content - ADTM Method D 5987

Recordkeeping

1. The owner or operator shall maintain records of the occurrence and duration of any startup, shut-down, or malfunction in the operation of each unit subject to 40 CFR Part 60; any malfunction of any air pollution control equipment; and all periods during which a continuous monitoring system or monitoring device is inoperative. These requirements are described in 40 CFR 60.7(b).

2. To determine compliance with the emission limitations for HAPs set forth in the Air Emissions Limitations Section of this permit, the owner or operator shall on a monthly basis perform a calculation of emissions using emission rates from the latest performance tests (or CEMs) for each specified period of operation or emission factors for those HAPs not required to be tested using the formula:

ER (in lb/hr) x hours/period x 1 ton/2000 lb, or
ER (in lb/mmBtu) x mmBtu/period x 1 ton/2000 lb, where:

ER	=	The hourly emission rate, FGD inlet or stack as appropriate (expressed in pounds per hour, or lb/mmBtu) measured during a performance test averaged over the period of the performance test.
hours/period	=	Actual number of hours per period assessed.
mmBtu/period	=	Actual mmBtu heat input per period assessed.
1/2000	=	Ton per pounds.

3. For normal operation the HCl and HF stack emission test results (in lbs/mmBtu) shall be used. For FGD maintenance activities the average emission rate shall be determined based on one-third of the FGD inlet emission rate and two-thirds of the stack emission rate (or the stack CEMs), or other appropriate performance ratio, for the duration of the activity. For startup, shutdown, and malfunction periods, the FGD inlet emission test results (in lb/mmBtu) will be the assumed emission rate for the duration of the activity.

4. The owner or operator shall maintain a rolling 12-month calculation of the emissions of HCl and HF.

5. The owner or operator shall maintain a monthly calculation of the emissions of the HAPs identified to be tested at Compliance and Other Performance Testing, paragraph 12.

6. The owner or operator shall maintain a monthly calculation of the emissions of any remaining untested HAPs, using either test data or EPA AP-42 emission factors[11].

[11] AP-42 Emission Factors Chapter 1: Table 1.1-14 Emission Factors for Various Organic Compounds from Controlled Coal Combustion.

7. The owner or operator shall maintain records of the occurrence and duration of any periods during which a continuous monitoring system or monitoring device is inoperative. These requirements are described in 40 CFR Part 75.

8. The owner or operator shall maintain records of the hourly emissions of NO_X and SO_2 to demonstrate compliance with their respective action levels.

9. The owner or operator shall maintain records of any correlation calculations or other emission determinations for any emission limitations as are not otherwise continuously monitored under this permit.

10. The owner or operator shall maintain records of the reports, notifications, and performance tests required by this permit.

11. All of the above records shall be maintained on site for a period of five (5) years.

Reporting

Reports demonstrating compliance shall be submitted to the KDHE in the same physical units as stated in the applicable requirements.

1. Items that are required to be reported quarterly shall be submitted to KDHE and postmarked by the 30th day following the end of each calendar quarter.

2. Items that are required to be reported semiannually (NO_X and SO_2 per 40 CFR 60.51Da(b)) and PM per 40 CFR 60.48Da(p) shall be submitted to KDHE and postmarked by the 30th day following the end of each calendar half or, upon agreement by KDHE and proper certification, submitted electronically per 40 CFR 60.51Da(k) by the 30th day following the end of each calendar quarter.

3. Items that are required to be reported annually (natural gas consumption of the auxiliary boiler and average annual scrubber inlet SO_2 concentration, SO2 annual limit, mercury 12-month rolling average) shall be submitted to KDHE and postmarked by the 30th day following the end of each calendar year.

4. Within 60 days after completion of the PM_{10} or $PM_{2\,5}$ performance test, the owner or operator shall furnish KDHE a written report of the results of such test. If the owner or operator requests emission limitation adjustment for PM_{10} or $PM_{2\,5}$ in accordance with this permit, the owner or operator shall continue to furnish quarterly reports on progress towards developing data sufficient to establish such new limitation until the conclusion of the process defined in this permit.

5. The excess emissions and monitoring systems performance report per 40 CFR 60.258(b)(3) shall be submitted to the KDHE as required by 40 CFR 60.7(c). The summary report form shall contain the information and be in the format as specified in 40 CFR 60.7(d). Written reports of excess emissions shall include the following information:

a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, the date and time of commencement and completion of each time period of excess emissions, and the process operating time during the reporting period.

b. Specific identification of each period of excess emissions that occurs during start-ups, shut-downs, and malfunctions, the nature and cause of any malfunction (if known), the corrective action taken or preventive measures adopted. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero span checks and the nature of the system repairs and adjustments.

c. When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

6. Reports shall be submitted semi-annually to KDHE to demonstrate compliance with the following Air Emission Limitations: Items 2a, b, c, e and h. These reports shall be submitted within 30 days following the end of each calendar half.

7. The owner or operator shall submit the following information by January 30 and July 30 of each calendar year:

a. The individual calculated or measured rolling 12-month emissions of mercury, HCl and HF emissions for each of the previous six months.
b. The calculated rolling 12-month emissions of all other tested HAPs for each of the previous six months.
c. The calculated rolling 12-month emissions of all untested HAPS for each of the previous six months.

The calculated HAP emissions for each month of the reporting period shall be presented in a fashion to demonstrate that the 10-ton individual and the 25-ton total HAP emission limitations have not been exceeded.

8. Malfunction

The Owner or Operator must notify KDHE by telephone, facsimile, or electronic mail transmission within two (2) working days following the discovery of any failure of air pollution control equipment, process equipment, or of the failure of any process to operate in a normal manner which results in an increase in emissions above any allowable emission limit stated in the "Air Emission Limitations" in this permit. In addition, the Owner or Operator must notify KDHE in writing within ten (10) days of any such failure. The written notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in "Air Emission Limitations," and the methods utilized to mitigate emissions and restore normal operations.

Compliance with this malfunction notification shall not automatically absolve the owner or operator of liability for the excess emissions resulting from such event.

9. The owner or operator shall report the dates and times when hourly emissions exceed the NO_x or SO_2 action levels in accordance with the malfunction reporting schedules and shall file a complete report no later than 30 days following the action level exceedance. KDHE may require materials and information, which may include an air dispersion modeling analysis to indicate whether the emissions caused or contributed significantly to any one-hour NAAQS exceedance.

Notification

1. The KDHE Bureau of Air shall be notified when installation of the equipment is complete so an evaluation may be conducted to verify compliance with applicable regulations.

2. The owner or operator shall make written notifications of the following to KDHE:

   a. The date construction of each affected facility under 40 CFR Part 60 is commenced. The notification is to be postmarked no later than 30 days after such date.

   b. The actual date of initial startup of each affected facility under 40 CFR Part 60. The notification is to be postmarked within 15 days after such date.

   c. The date when the initial performance testing of each affected facility under 40 CFR Part 60 is to commence. The notification is to be postmarked no less than 30 days prior to such date.

   The attached NSPS notification form will be used to submit the above required notifications.

3. The owner or operator shall make such initial notifications relating to the emergency generator and diesel fire pumps as are required at 40 CFR 63.9 and 40 CFR 63.6645(f) to KDHE.

Title IV and Acid Rain Requirements

The steam generator is subject to certain Title IV and Acid Rain requirements. A complete Acid Rain permit application shall be submitted in accordance with the deadlines specified in 40 CFR Part 72. Notification regarding applicable monitoring equipment will be made as required. The owner or operator will submit the applicable equipment monitoring plan and will notify KDHE and EPA when the CEMS certification tests are to be performed.

Title V Requirements

A complete application for significant modification to the current Title V permit for Holcomb Station, to include the requirements of this permit, shall be submitted within one year of the initial startup of H2.

General Provisions

1. Except as the term of this permit might be extended in accordance with applicable law, the permit shall expire 18 months from the effective date of its issuance unless construction of the steam generator is commenced within 18 months of the effective date of this permit. If construction of the steam generator approved in this permit is commenced within the specified period following the effective date of this permit, construction can continue on such unit in accordance with the provisions of 40 C.F.R. 52.21(r)(2) and K.A.R. 28-19-301(c).

2. A construction permit or approval must be issued by KDHE prior to commencing any construction or modification of equipment or processes which result in an increase in potential-to-emit equal to or greater than the thresholds specified at K.A.R. 28-19-300.

3. Upon presentation of credentials and other documents as may be required by law, the owner or operator shall allow a representative of the KDHE (including authorized contractors of the KDHE) to:

    a. enter upon the owner or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under conditions of this permit;

    b. have access to and copy, at reasonable times, any records that must be kept under conditions of this permit;

    c. inspect at reasonable times, any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

    d. sample or monitor, at reasonable times, for the purposes of assuring compliance with this permit or as otherwise authorized by the Secretary of the KDHE, any substances or parameters at any location.

4. The emission units or stationary sources that are the subject of this permit shall be operated in compliance with all applicable requirements of the Kansas Air Quality Act and the federal Clean Air Act.

5. This permit does not relieve the owner or operator of the obligation to obtain other approvals, permits, licenses or documents of sanction that may be required by other federal, state or local government agencies.

6. Issuance of this permit does not relieve the owner or operator of any requirement to obtain an air quality operating permit under any applicable provision of K.A.R. 28-19-500.

Permit Engineer

Rick Bolfing, P.E.
Professional Environmental Engineer
Air Permitting Section

Issued by

John W. Mitchell
Acting Secretary
Kansas Department of Health and Environment

12-16-2010
Date Signed

RJB:saw
c: SWDO
C-8849

Exhibit 4

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

February 5, 2007

Mr. Fred Carl
Environmental Manager
Black Hills Corporation
PO Box 1400
Rapid City, SD 57709-1400

Permit No. **CT-4517**

Dear Mr. Carl:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Black Hills Corporation's application to construct a nominal 100 megawatt (MW) coal fired electric power generating station, to be known as WYGEN 3, located at 13151 Hwy 51, approximately five (5) miles east of Gillette in Campbell County, Wyoming.

Following this agency's proposed approval of the request as published October 13, 2006 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30-day period in which to submit comments concerning the proposed new source, and an opportunity for a public hearing. Comments have been received and were considered in the final permit. Therefore, on the basis of the information provided to us, approval to construct the Wygen 3 as described in the application is hereby granted pursuant to Chapter 6, Section 2 and 4 of the regulations with the following conditions:

1. Authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

2. All substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. A major source, as defined by Chapter 6, Section 3 (b)(xvii) of the WAQSR, shall file a complete application to obtain an operating permit within 12 months after commencing operations.

4. All notifications, reports and correspondence required by this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 1866 South Sheridan Avenue, Sheridan, WY 82801.

5. Owner or operator shall furnish the Administrator written notification of: (i) the anticipated date of initial startup not more than 60 days or less than 30 days prior to such date, and; (ii) the actual date of initial start-up within 15 days after such date in accordance with Chapter 6, Section 2(i) of the WAQSR.

6. The date of commencement of construction shall be reported to the Administrator within 30 days of such date. The permit shall become invalid if construction or modification is not commenced within 24 months of the date of permit issuance or if construction is discontinued for a period of 24 months or more in accordance with Chapter 6, Section 2(h) of the WAQSR. The Administrator may extend such time period(s) upon a satisfactory showing that an extension is justified.

7. Performance tests shall be conducted within 30 days of achieving maximum design rate but not later than 90 days following initial start-up in accordance with Chapter 6, Section 2(j) of the WAQSR. The operator shall provide 15 days prior notice of the test date. If maximum design production rate is not achieved within 90 days of start-up, the Administrator may require testing at the rate achieved and again when maximum rate is achieved.

8. Emission rates shall not exceed levels in the following tables:

PC Boiler (ES3-01) Allowable Emissions

Pollutant	lb/MMBtu	lb/MW-hr	lb/hr	tpy
NO_X	0.05 (12 month rolling)	1.0 (30-day rolling)[1]	65.0 (30-day rolling)	285
SO_2	0.09 (12 month rolling)	1.4 (30-day rolling)[1]	156.0 (3-hr block) 117.0 (30-day rolling)	512
PM/PM_{10}	0.012[2]	–	15.6	68
CO	0.15	–	195.0	854
Hg	–	97×10^{-6} (12 month rolling)[1]	–	0.04

[1] NSPS Subpart Da Limit
[2] Filterable PM/PM_{10}

9. Mercury emissions shall be addressed as follows:

   A) A one year mercury optimization study shall be performed at the WYGEN 2 facility with a target emission rate of no more than 20×10^{-6} lb/MW-hr, 12 month rolling average. A protocol for the study shall be submitted the Division for review and approval prior to commencement of the study. The protocol shall include a description of control technique(s) to be employed including type of sorbent, if applicable, and proposed operational parameters (e.g. carbon injection rate), test methods, and procedures. The results of the study shall be submitted to the Division at least 180 days prior to startup of WYGEN3.

   B) A mercury control system shall be installed and operated at this facility within 90 days of initial startup. This permit will be reopened to revise the mercury limit in condition 8 and/or add operational parameters to this condition based on the results of the WYGEN 2 study.

10. Opacity shall be limited as follows:

A) Visible emissions from the PC Boiler (ES3-01) shall be limited to 20% opacity (6-minute average) except for one 6-minute period per hour of not more than 27 percent opacity in accordance with NSPS, Subpart Da, 40 CFR 60.42Da(b).

B) Coal conveyors and associated dustless fogging systems shall be operated and maintained such that the conveyor enclosures and transfer points exhibit no visible emissions in accordance with 40 CFR part 60, Appendix A, Method 22.

C) Opacity shall be limited to less than 20% from all coal processing and conveying equipment, coal storage systems, and coal transfer and loading systems in accordance with NSPS, Subpart Y, 40 CFR 60.252(c) as determined by 40 CFR Part 60, Appendix A, Method 9.

D) Opacity from any other source of emissions at this facility shall be limited to 20% opacity in accordance with WAQSR, Chapter 3, Section 2(a) as determined by 40 CFR Part 60, Appendix A, Method 9.

11. Initial performance tests, required by Condition 7 of this permit, shall consist of the following:

A) NO_X - 30 day rolling average - Initial testing and compliance determination shall follow 40 CFR 60.48Da, 40 CFR 60.49Da, and 40 CFR 60.50Da.

B) SO_2 - EPA Method 6C or equivalent EPA Reference Methods shall be used to determine initial compliance with the SO_2 3 hour emission limit. Tests shall consist of 3 runs of 3 hours each.

C) SO_2 - 30 day rolling average/Percent Reduction Requirements - Initial testing and compliance determination shall follow 40 CFR 60.48Da, 40 CFR 60.49Da, and 40 CFR 60.50Da.

D) PM/PM_{10} - Testing shall follow 40 CFR 60.50Da to determine initial compliance with the lb/MMBtu limit established in this permit.

E) Opacity - <u>PC Boiler</u>: EPA Method 9 and the procedures in WAQSR, Chapter 5, Section 2(i) shall be used to determine initial compliance with opacity limits in this permit.

<u>Coal Handling</u>: 40 CFR Part 60, Appendix A, Method 22 shall be conducted on conveyor enclosures and transfer points to determine no visible fugitive particulate emissions. Performance tests shall be at least 30 minutes in duration, with observations taken from each side of the enclosure or transfer point.

<u>Ash and Lime Handling</u>: EPA Method 9 shall be used to determine initial compliance with opacity limits in this permit.

F) CO – Three 1-hour tests following EPA Reference Methods 1-4 and 10 or equivalent EPA Reference Methods shall be used to determine initial compliance with the CO emission limit in this permit.

12. The following testing shall be performed in accordance with Conditions 7 and 13:

A) PC Boiler Stack shall be tested to determine NH_3 emissions following EPA Conditional Test Method 27 (CTM-027) or equivalent methods. Results of the tests shall be reported in units of lb/hr and ppm_v on a dry basis corrected to 3 percent O_2.

B) PC Boiler exhaust shall be tested at the PC Boiler Stack to determine total fluoride emissions following EPA Method 13A, 13B, or equivalent methods. Results of the tests shall be reported in units of lb/hr.

C) PC Boiler exhaust shall be tested at the PC Boiler Stack to determine hydrogen chloride emissions following EPA Method 26 or equivalent methods. Results of the tests shall be reported in units of lb/hr.

D) PC Boiler exhaust shall be tested at the PC Boiler Stack to determine emissions of metals (antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, and selenium) using EPA Method 29 or equivalent methods. Results of the tests shall be reported in units of lb/hr.

E) PC Boiler stack shall be tested to determine sulfuric acid mist (H_2SO_4) emissions following EPA Method 8 or equivalent methods. Results of the tests shall be reported in units of lb/hr. Sulfur dioxide (SO_2) emission rates shall be determined during the H_2SO_4 tests and reported.

F) PC Boiler exhaust shall be tested at the PC Boiler Stack to determine condensible particulate matter emissions with three 1 hour tests following EPA Reference Method 202. Results of the tests shall be reported in units of lb/hr.

13. Prior to any performance testing or monitor certification testing required by this permit, a test protocol shall be submitted to the Division for approval, at least 30 days prior to testing. Results of the tests shall be submitted to this office within 45 days of completing.

14. Within 90 days of initial startup, Black Hills Corporation (BHC) shall use the following in-stack continuous emission monitoring (CEM) equipment on the PC Boiler stack to demonstrate continuous compliance with the emission limits set forth in this permit:

A) BHC shall install, calibrate, operate, and maintain a monitoring system, and record the output, for measuring NO_X emissions discharged to the atmosphere in units lb/MW-hr, lb/MMBtu and lb/hr. The NO_X monitoring system shall consist of the following:

i) A continuous emission NO_X monitor located in the PC Boiler stack.

ii) A continuous flow monitoring system for measuring the flow of exhaust gases discharged into the atmosphere.

iii) A watt meter to measure gross electrical output in megawatt-hours on a continuous basis.

iv) An in-stack oxygen or carbon dioxide monitor for measuring oxygen or carbon dioxide content of the flue gas at the location NO_X emissions are monitored.

B) Black Hills Corporation shall install, calibrate, operate, and maintain a SO_2 monitoring system, and record the output, for measuring emissions discharged to the atmosphere in units of lb/MMBtu and lb/hr. The SO_2 monitoring system shall consist of the following:

i) A continuous emission SO_2 monitor located in the PC Boiler stack.

ii) A continuous flow monitoring system for measuring the flow of exhaust gases discharged into the atmosphere.

iii) An in-stack oxygen or carbon dioxide monitor for measuring oxygen or carbon dioxide content of the flue gas at the location SO_2 emissions are monitored.

C) Black Hills Corporation shall install, calibrate, operate, and maintain a mercury CEM in accordance with 40 CFR 60 Subpart Da, and record the output, for measuring emissions discharged to the atmosphere in units of lb/MW-hr and lb/hr. As an alternative, Black Hills Corporation may use a sorbent trap monitoring in accordance with 40 CFR 60 Subpart Da and record emissions discharged to the atmosphere in units of lb/MW-hr and lb/hr.

D) Black Hills Corporation shall install, calibrate, operate, and maintain a monitoring system, and record the output, for measuring the opacity of the emissions discharged to the atmosphere.

E) Each continuous monitor system listed in this condition shall comply with the following:

i) NSPS Subpart Da, Standards of Performance for Electric Utility Steam Generating Units (40 CFR 60.49Da).

ii) Monitoring requirements of WAQSR, Chapter 5, Section 2(j) including the following:

a) 40 CFR 60, Appendix B, Performance Specification 1 for opacity, Performance Specification 2 for NO_X and SO_2, Performance Specification 3 for O_2 or CO_2, and Performance Specification 12 for mercury. The monitoring systems must demonstrate linearity in accordance with Division requirements and be certified in both concentration (ppm_v) and units of the standard (lb/MMBtu, lb/MW-hr and lb/hr).

b) Quality Assurance requirements of 40 CFR 60, Appendix F.

c) Black Hills Corporation shall develop and submit for the Division's approval a Quality Assurance plan for the monitoring systems listed in this condition within 90 days of initial startup.

15. Following the initial performance tests, compliance with the NO_X, SO_2, Hg, and opacity limits for the PC Boiler set forth in this permit shall be determined with data from the continuous monitoring systems required by Condition 14 of this permit as follows:

A) Exceedances of the limits shall be defined as follows:

i) Any 12 month rolling average which exceeds the lb/MMBtu NO_X or SO_2 limits as calculated using the following formula:

$$E_{avg} = \frac{\sum_{h=1}^{n} (C)_h}{n}$$

Where:

C = 1-hour average emission rate (lb/MMBtu) for hour "h" calculated using valid data from the CEM equipment required in Condition 14 and the procedures in 40 CFR 60, Appendix A, Method 19. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j).

E_{avg} = Weighted 12 month rolling average emission rate (lb/MMBtu)

n = The number of unit operating hours in the 12 month period with valid emissions data meeting the requirements of WAQSR, Chapter 5, Section 2(j).

ii) Any 30-day rolling average which exceeds the lb/MW-hr NO_X or SO_2 limits calculated in accordance 40 CFR 60.48Da, 60.49Da, and 60.50Da.

iii) Any 30-day rolling average calculated using valid data (output concentration and average hourly volumetric flowrate) from the CEM equipment required in Condition 14 which exceeds the lb/hr NO_X or SO_2 limits established in this permit. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j). The 30-day average emission rate shall be calculated at the end of each boiler operating day (as defined in 40 CFR 60.41Da) as the arithmetic average of hourly emissions with valid data during the previous 30-day period.

iv) Any 3-hour block average of SO_2 calculated using valid data (output concentration and average hourly volumetric flowrate) from the CEM equipment required in Condition 14 which exceeds the lb/hr limit established in this permit. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j). The 3-hour average emission rate shall be calculated at the end of each 3-hour operating block as the arithmetic average of hourly emissions with valid data during the previous three operating hours.

v) Any 12 month rolling average of mercury (Hg) emissions which exceeds the lb/MW-hr limit calculated in accordance 40 CFR Part 60, Subpart Da.

vi) Any 6-minute average opacity, except for one 6-minute period per hour of not more than 27 percent opacity, in excess of 20 percent in accordance with 40 CFR 60.42Da(b).

B) Black Hills Corporation shall comply with all reporting and record keeping requirements as specified in WAQSR Chapter 5, Section 2(g) and 40 CFR Part 60, Subpart Da. All excess emissions shall be reported using the procedures and reporting format specified in WAQSR Chapter 5, Section 2(g). In addition, reporting and record keeping requirements for the 30-day rolling lb/MW-hr NO_X and SO_2 limits, the 12 month rolling Hg limit, and the opacity limit shall follow the requirements in 40 CFR 60.51Da and 60.52Da.

16. Black Hills Corporation (BHC) shall comply with the following maintenance and inspection requirements for the coal conveyors and associated dustless fogging systems:

A) Daily inspections shall be conducted at each of the coal conveyor enclosures and transfer points. BHC shall utilize a daily check form to document daily inspections. A representative form shall be submitted to and approved by the Division prior to utilization. Upon approval, the form will be incorporated as part of the permit. The form may be revised without administratively amending the applicable permit, but revisions shall be approved by the Division prior to implementation.

B) BHC shall institute a monthly preventative maintenance plan for each of the coal conveyor enclosures and dustless fogging systems. A representative plan shall be submitted to and approved by the Division prior to utilization. Upon approval, the plan will be incorporated as part of the permit. The monthly preventative maintenance plan may be revised without administratively amending the applicable permit, but revisions shall be approved by the Division prior to implementation.

17. Black Hills Corporation shall comply with all applicable requirements of 40 CFR 60 Subpart Da and Subpart Y.

18. Black Hills Corporation shall use a wet handling system for waste ash load-out. A pug mill rotary mixer shall be used to mix ash to a consistent moisture content of approximately 30 to 40% prior to loading into the ash haul truck. Black Hills Corporation shall record and maintain records of the quantity of water supplied to the pug mill spray nozzles and the quantity of ash loaded each calendar month. At the end of each calendar month, Black Hills Corporation shall calculate the moisture content of the waste ash by dividing the mass of water used by the mass of waste ash and water combined. Lime and ash shall be entirely enclosed in the haul trucks whenever the wet handling system is not operating. Black Hills Corporation shall maintain records of dates that the wet handling system is not operating and whether or not the haul trucks are covered.

19. Unpaved haul roads will be treated with suitable chemical dust suppressants in addition to water to control fugitive dust emissions. All treated roads will be maintained on a continuous basis to the extent that the surface treatment remains viable as a control measure.

20. Black Hills Corporation shall comply with acid rain program regulations in WAQSR, Chapter 11, Section 2.

21. Records required by any applicable regulation or permit condition shall be maintained for a minimum period of five (5) years and shall be readily accessible to Division representatives.

22. Black Hills Corporation shall upgrade the existing meteorological monitoring site to collect the meteorological parameters specified below and operate this site in accordance with the requirements of 40 CFR Parts 50 and 58. Meteorological parameters shall be measured at multiple levels (2 meters, 10 meters, and 30 meters) to ensure that data used for modeling are representative of conditions for elevated releases. The following meteorological data shall be collected for a period such that five (5) complete years of meteorological data which are suitable for input to dispersion models are obtained:

    1) Horizontal wind speed at 10 meters and 30 meters
    2) Horizontal wind direction at 10 meters and 30 meters
    3) Lateral turbulence [Horizontal wind deviation (σ_θ)] at 10 meters
    4) Vertical wind speed at 10 meters and 30 meters
    5) Delta temperature measurements between 2-10 meters and between 2-30 meters (Temperature to be measured at 2 m, 10 m, and 30 m)
    6) Solar Insolation or Net Radiation Measurements at approximately 1 meter
    7) Surface Pressure

    Where: Zo = surface roughness length
    σ_θ = sigma theta (horizontal wind deviation)

    The data generated by the network shall be submitted in an approved electronic format on a quarterly basis, within 60 days following the end of the quarter; these data shall be compiled for use in dispersion models utilizing the solar radiation-delta T method and the modified sigma theta method for determining atmospheric stability. Black Hills Corporation shall maintain a quality assurance plan for the monitoring network, as required by 40 CFR Part 58 and approved by the Division.

23. Black Hills Corporation shall submit an evaluation within 180 days after issuance of this permit addressing startup and shutdown issues including duration and frequency, operation of control devices, operational practices to minimize emissions, and emission profiles for NO_X, CO, SO_2, and PM_{10}. The evaluation shall address compliance with emission limits in this permit for NO_X, SO_2, and opacity during startup and shutdown and include any necessary modeling. The Division will review the evaluation and revise conditions in this permit as necessary prior to initial startup.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 3, 5, 6 and 7. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

David A. Finley
Administrator
Air Quality Division

John V. Corra
Director
Dept. of Environmental Quality

cc: Mike Warren

Exhibit 5

October 15, 2007

Mr. Jerry Menge
Air Quality Program Coordinator
Basin Electric Power Cooperative
1717 East Interstate Avenue
Bismarck, ND 58501

Permit No. **CT-4631**

Dear Mr. Menge:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Basin Electric Power Cooperative's application to construct a coal fired electric power generating station to be known as Dry Fork Station. The generating station will consist of one pulverized coal (PC) boiler rated at 385 MW (net) with associated material handling and auxiliary equipment and be located adjacent to the Dry Fork Mine on Highway 59, approximately 7 miles north northeast of Gillette, Campbell County, Wyoming.

Following this agency's proposed approval of the request as published February 26, 2007 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30 day period in which to submit comments concerning the proposed new source, and an opportunity for a public hearing. Public comments have been received and a public hearing on the proposal was held on June 28, 2007. On the basis of the information provided to us in the application and comments received during the public notice period and the public hearing, approval to construct Dry Fork Station as described in the application is hereby granted pursuant to Chapter 6, Section 2, Section 4, and Section 6 of the regulations with the following conditions:

1. Authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

2. All substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. As a major source, defined by Chapter 6, Section 3 (b)(xvii) of the WAQSR, Basin Electric shall file a complete application to obtain an operating permit within 12 months after commencing operations.

4. All notifications, reports and correspondence required by this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 1866 South Sheridan Avenue, Sheridan, WY 82801.

5. Owner or operator shall furnish the Administrator written notification of: (i) the anticipated date of initial startup not more than 60 days or less than 30 days prior to such date, and; (ii) the actual date of initial start-up within 15 days after such date in accordance with Chapter 6, Section 2(i) of the WAQSR.

6. The date of commencement of construction shall be reported to the Administrator within 30 days of such date. The permit shall become invalid if construction or modification is not commenced within 24 months of the date of permit issuance or if construction is discontinued for a period of 24 months or more in accordance with Chapter 6, Section 2(h) of the WAQSR. The Administrator may extend such time period(s) upon a satisfactory showing that an extension is justified.

7. Performance tests shall be conducted within 30 days of achieving maximum design rate but not later than 90 days following initial start-up in accordance with Chapter 6, Section 2(j) of the WAQSR. If maximum design production rate is not achieved within 90 days of start-up, the Administrator may require testing at the rate achieved and again when maximum rate is achieved.

8. Prior to any performance testing or monitor certification testing required by this permit, a test protocol shall be submitted to the Division for approval, at least 30 days prior to testing. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results of the tests shall be submitted to this office within 45 days of completing.

9. Emission rates shall not exceed levels in the following tables. The lb/MMBtu, lb/hr and tpy emission limits apply at all times including periods of startup and shutdown.

PC Boiler (ES1-01) Allowable Emissions

Pollutant	lb/MMBtu	lb/MW-hr	lb/hr	tpy
NO_X	0.05 (12 month rolling)	1.0 (30-day rolling)[1]	190.1 (30-day rolling)	832.4
SO_2	0.070 (12 month rolling)	1.4 (30-day rolling)[1]	380.1 (3-hr block) 285.1 (30-day rolling)	1165.4
PM/PM_{10}	0.012[2]	–	45.6	199.8
CO	0.15	–	570.2 (30-day rolling)	2497
Hg	–	97×10^{-6} (12 month rolling)[1]	–	0.16
H_2SO_4	0.0025	–	9.5	41.6
HF	–	–	2.62	11.5
VOC	0.0037	–	14.1	61.6
NH_3	–	–	10 ppm_v[3], 19.6 lb/hr	85.8

[1] NSPS Subpart Da Limit
[2] Filterable PM/PM_{10}
[3] Dry Basis, 3% O_2

Auxiliary Boiler and Inlet Gas Heater Allowable Emissions

Unit No.	Emission Unit	NO_X (lb/MMBtu)	NO_X (lb/hr)	NO_X (tpy)	CO (lb/MMBtu)	CO (lb/hr)	CO (tpy)
ES1-02	134 MMBtu/hr Auxiliary Boiler[1]	0.04	5.4	5.4	0.08	10.7	10.7
ES1-06	8.36 MMBtu/hr Inlet Gas Heater[2]	0.1	0.8	1.0	0.08	0.7	0.8

[1] Annual emissions based on 2,000 hours.
[2] Annual emissions based on 2,500 hours.

Material Handling PM/PM_{10} Allowable Emissions

Unit No.	Emission Unit	gr/dscf	lb/hr	tpy
ES1-07	Coal Storage Silo 1 Dust Collector (13,704 dscfm)	0.005	0.6	2.6
ES1-08	Coal Storage Silo 2 Dust Collector (13,704 dscfm)	0.005	0.6	2.6
ES1-09	Coal Storage Silo 3 Dust Collector (8,849 dscfm)	0.005	0.4	1.7
ES1-10	Coal Crusher House Dust Collector (25,216 dscfm)	0.005	1.1	4.7
ES1-11	Plant Coal Silo Transfer Bay Dust Collector (27,408 dscfm)	0.005	1.2	5.1
ES1-12	Pebble Lime Receiving Silo Bin Vent Filter (728 dscfm)	0.005	0.03	0.1
ES1-13	Pebble Lime Day Silo Bin Vent Filter (1,001 dscfm)	0.005	0.04	0.2
ES1-14	Lime Hydrator Mixer Dust Collector No. 1 (4,698 dscfm)	0.005	0.2	0.9
ES1-15	Lime Hydrator Mixer Dust Collector No. 2 (4,698 dscfm)	0.005	0.2	0.9
ES1-16	Hydrated Lime Dust Collector No. 1 (16,380 dscfm)	0.005	0.7	3.1
ES1-17	Hydrated Lime Dust Collector No. 2 (16,380 dscfm)	0.005	0.7	3.1
ES1-18	Hydrated Lime Silo 1 Bin Vent Filter (1,729 dscfm)	0.005	0.07	0.3
ES1-19	Hydrated Lime Silo 1 Bin Vent Filter (1,729 dscfm)	0.005	0.07	0.3
ES1-20	Activated Carbon Silo Bin Vent Filter (728 dscfm)	0.005	0.03	0.1
ES1-22	Fly Ash/FGD Waste Silo Separator/Filter Exhaust (1,092 dscfm)	0.005	0.05	0.2
ES1-22	Fly Ash/FGD Waste Silo Bin Vent Filter (1,138 dscfm)	0.005	0.05	0.2

10. Mercury emissions from the PC Boiler shall be addressed as follows:

A) A one year mercury optimization study shall be performed at this facility with a target emission rate of no more than 20×10^{-6} lb/MW-hr, 12 month rolling average. A protocol for the study shall be submitted the Division for review and approval prior to commencement of the study. The protocol shall include a description of control technique(s) to be employed including type of sorbent, if applicable, and proposed operational parameters (e.g. carbon injection rate), test methods, and procedures. The optimization study shall commence no later than 90 days after initial startup. The results of the study shall be submitted to the Division within 30 days of completion of the study.

B) A mercury control system shall be installed and operated at this facility within 90 days of initial startup. This permit will be reopened to revise the mercury limit in condition 9 and/or add operational parameters to this condition based on the results of the mercury optimization study.

11. Opacity shall be limited as follows:

A) Visible emissions from the PC boiler (ES1-01) shall be limited to 20% opacity (6-minute average) except for one 6-minute period per hour of not more than 27 percent opacity in accordance with NSPS, Subpart Da, 40 CFR 60.42Da(b).

B) Coal conveyors shall be operated and maintained such that the conveyor enclosures and transfer points exhibit no visible emissions in accordance with 40 CFR part 60, Appendix A, Method 22.

C) Opacity shall be limited to less than 20% from all coal processing and conveying equipment, coal storage systems, and coal transfer and loading systems in accordance with NSPS, Subpart Y, 40 CFR 60.252(c) as determined by 40 CFR Part 60, Appendix A, Method 9.

D) Opacity from any other source of emissions at this facility shall be limited to 20% opacity in accordance with WAQSR, Chapter 3, Section 2(a) as determined by 40 CFR Part 60, Appendix A, Method 9.

12. Initial performance tests, required by Condition 7 of this permit, shall consist of the following:

PC Boiler (ES1-01):

A) NO_X - 30 day rolling average - Initial testing and compliance determination shall follow 40 CFR 60.48Da, 60.49Da, and 60.50Da.

B) SO_2 - EPA Method 6C or equivalent EPA Reference Methods shall be used to determine initial compliance with the SO_2 3 hour emission limit. Tests shall consist of 3 runs of 3 hours each.

C) SO_2 - 30 day rolling average/Percent Reduction Requirements - Initial testing and compliance determination shall follow 40 CFR 60.48Da, 60.49Da, and 60.50Da.

D) PM/PM_{10} - Testing shall follow 40 CFR 60.50Da to determine initial compliance with the lb/MMBtu limit established in this permit.

E) Opacity - EPA Method 9 and the procedures in WAQSR, Chapter 5, Section 2(i) shall be used to determine initial compliance with opacity limits in this permit.

F) CO - 30 day rolling average using certified CEM

G) PC Boiler exhaust shall be tested at the PC Boiler Stack to determine total fluoride emissions following EPA Method 13A, 13B, or equivalent EPA Reference Methods. Results of the tests shall be reported in units of lb/hr.

H) PC Boiler stack shall be tested to determine sulfuric acid mist (H_2SO_4) emissions following EPA Method 8 or equivalent EPA Reference Methods. Results of the tests

shall be reported in units of lb/hr. Sulfur dioxide (SO_2) emission rates shall be determined during the H_2SO_4 tests and reported.

Auxiliary Boiler (ES1-02) and Inlet Gas Heater (ES1-06):

A) NO_X - Three 1-hour tests following EPA Reference Methods shall be employed to determine initial compliance with the lb/MMBtu and lb/hr NO_X emission limits established by this permit.

B) CO - Three 1 hour tests following EPA Reference Methods shall be employed to determine initial compliance with the lb/MMBtu and lb/hr CO emission limits established by this permit.

Material Handling:

A) PM/PM_{10} - Three 1 hour tests following EPA Methods 1-5, front half only, shall be employed to determine initial compliance with the particulate emission limits established by this permit.

B) Opacity - Testing for emission units not subject to 40 CFR 60, Subpart Y shall be conducted in accordance with WAQSR Chapter 6, Section 2(j) and shall consist of three (3) 6-minute averages of the opacity as determined by Method 9 of 40 CFR 60, Appendix A.

Testing for emission units subject to Subpart Y shall follow the requirements of Chapter 5, Section 2(i) of the WAQSR.

13. The following testing shall be performed in accordance with Conditions 7 and 8:

A) PC Boiler Stack shall be tested to determine NH_3 emissions following EPA Conditional Test Method 27 (CTM-027) or equivalent methods. Results of the tests shall be reported in units of lb/hr and ppm_v on a dry basis corrected to 3 percent O_2.

B) PC Boiler exhaust shall be tested at the PC Boiler Stack to determine hydrogen chloride emissions following EPA Method 26 or equivalent methods. Results of the tests shall be reported in units of lb/hr.

C) PC Boiler exhaust shall be tested at the PC Boiler Stack to determine emissions of metals (antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, and selenium) using EPA Method 29 or equivalent methods. Results of the tests shall be reported in units of lb/hr.

D) PC Boiler exhaust shall be tested at the PC Boiler Stack to determine condensible particulate matter emissions with three 1 hour tests following EPA Reference Method 202. Results of the tests shall be reported in units of lb/hr.

14. Within 90 days of initial startup, the following in-stack continuous emission monitoring (CEM) equipment shall be used on the PC Boiler stack to demonstrate continuous compliance with the emission limits set forth in this permit:

A) Basin Electric shall install, calibrate, operate, and maintain a monitoring system, and record the output, for measuring NO_X emissions discharged to the atmosphere in units of lb/MW-hr, lb/MMBtu and lb/hr. The NO_X monitoring system shall consist of the following:

i) A continuous emission NO_X monitor located in the PC boiler stack.

ii) A continuous flow monitoring system for measuring the flow of exhaust gases discharged into the atmosphere.

iii) A watt meter to measure gross electrical output in megawatt-hours on a continuous basis.

iv) An in-stack oxygen or carbon dioxide monitor for measuring oxygen or carbon dioxide content of the flue gas at the location NO_X emissions are monitored.

B) Basin Electric shall install, calibrate, operate, and maintain a SO_2 monitoring system, and record the output, for measuring emissions discharged to the atmosphere in units of lb/MMBtu and lb/hr. The SO_2 monitoring system shall consist of the following:

i) A continuous emission SO_2 monitor located in the PC boiler stack.

ii) A continuous flow monitoring system for measuring the flow of exhaust gases discharged into the atmosphere.

iii) An in-stack oxygen or carbon dioxide monitor for measuring oxygen or carbon dioxide content of the flue gas at the location SO_2 emissions are monitored.

C) Basin Electric shall install, calibrate, operate, and maintain a CO monitoring system, and record the output, for measuring emissions discharged to the atmosphere in units of lb/hr. The CO monitoring system shall consist of the following:

i) A continuous emission CO monitor located in the PC boiler stack.

ii) A continuous flow monitoring system for measuring the flow of exhaust gases discharged into the atmosphere.

iii) An in-stack oxygen or carbon dioxide monitor for measuring oxygen or carbon dioxide content of the flue gas at the location CO emissions are monitored.

D) Basin Electric shall install, calibrate, operate, and maintain a mercury CEM in accordance with 40 CFR 60 Subpart Da, and record the output, for measuring emissions discharged to the atmosphere in units of lb/MW-hr and lb/hr. As an alternative, Basin Electric may

use a sorbent trap monitoring in accordance with 40 CFR 60 Subpart Da and record emissions discharged to the atmosphere in units of lb/MW-hr and lb/hr.

E) Basin Electric shall install, calibrate, operate, and maintain a monitoring system, and record the output, for measuring the opacity of the emissions discharged to the atmosphere.

F) Each continuous monitor system listed in this condition shall comply with the following:

i) NSPS Subpart Da, Standards of Performance for Electric Utility Steam Generating Units (40 CFR 60.49Da).

ii) Monitoring requirements of WAQSR, Chapter 5, Section 2(j) including the following:

a) 40 CFR 60, Appendix B, Performance Specification 1 for opacity, Performance Specification 2 for NO_X and SO_2, Performance Specification 3 for O_2 or CO_2, Performance Specification 4 for CO and Performance Specification 12 for mercury. The monitoring systems must demonstrate linearity in accordance with Division requirements and be certified in both concentration (ppm_v) and units of the standard (lb/MMBtu, lb/MW-hr and lb/hr).

b) Quality Assurance requirements of 40 CFR 60, Appendix F.

c) Basin Electric shall develop and submit for the Division's approval a Quality Assurance plan for the monitoring systems listed in this condition within 90 days of initial startup.

15. Following the initial performance tests, compliance with the NO_X, SO_2, CO (lb/hr), Hg, and opacity limits for the PC Boiler set forth in this permit shall be determined with data from the continuous monitoring systems required by Condition 14 of this permit as follows:

A) Exceedances of the limits shall be defined as follows:

i) Any 12 month rolling average which exceeds the lb/MMBtu NO_X or SO_2 limits as calculated using the following formula:

$$E_{avg} = \frac{\sum_{h=1}^{n} (C)_h}{n}$$

Where:

C = 1-hour average emission rate (lb/MMBtu) for hour "h" calculated using valid data from the CEM equipment required in Condition 14 and the procedures in 40 CFR 60, Appendix A, Method 19. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j).

E_{avg} = Weighted 12 month rolling average emission rate (lb/MMBtu)
n = The number of unit operating hours in the 12 month period with valid emissions data meeting the requirements of WAQSR, Chapter 5, Section 2(j).

ii) Any 30-day rolling average which exceeds the lb/MW-hr NO_X or SO_2 limits calculated in accordance 40 CFR 60.48Da, 60.49Da, and 60.50Da.

iii) Any 30-day rolling average calculated using valid data (output concentration and average hourly volumetric flowrate) from the CEM equipment required in Condition 14 which exceeds the lb/hr NO_X, SO_2, or CO limits established in this permit. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j). The 30-day average emission rate shall be calculated at the end of each boiler operating day (as defined in 40 CFR 60.41Da) as the arithmetic average of hourly emissions with valid data during the previous 30-day period.

iv) Any 3-hour block average of SO_2 calculated using valid data (output concentration and average hourly volumetric flowrate) from the CEM equipment required in Condition 14 which exceeds the lb/hr limit established in this permit. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j). The 3-hour average emission rate shall be calculated at the end of each 3-hour operating block as the arithmetic average of hourly emissions with valid data during the previous three operating hours.

v) Any 12 month rolling average of mercury (Hg) emissions which exceeds the lb/MW-hr limit calculated in accordance 40 CFR Part 60, Subpart Da.

vi) Any 6-minute average opacity, except for one 6-minute period per hour of not more than 27 percent opacity, in excess of 20 percent in accordance with 40 CFR 60.42Da(b).

B) Basin Electric shall comply with all reporting and record keeping requirements as specified in WAQSR Chapter 5, Section 2(g) and 40 CFR Part 60, Subpart Da. All excess emissions shall be reported using the procedures and reporting format specified in WAQSR Chapter 5, Section 2(g). In addition, reporting and record keeping requirements for the 30-day rolling lb/MW-hr NO_X and SO_2 limits, the 12 month rolling Hg limit, and the opacity limit shall follow the requirements in 40 CFR 60.51Da and 60.52Da.

16. Basin Electric shall comply with the following maintenance and inspection requirements for the coal conveyors:

A) Daily inspections shall be conducted at each of the coal conveyor enclosures and transfer points. Basin Electric shall utilize a daily check form to document daily inspections. A representative form shall be submitted to and approved by the Division prior to utilization. Upon approval, the form will be incorporated as part of the permit. The form may be revised without administratively amending the applicable permit, but revisions shall be approved by the Division prior to implementation.

B) Basin Electric shall institute a monthly preventative maintenance plan for each of the coal conveyor enclosures. A representative plan shall be submitted to and approved by the Division prior to utilization. Upon approval, the plan will be incorporated as part of the permit. The monthly preventative maintenance plan may be revised without administratively amending the applicable permit, but revisions shall be approved by the Division prior to implementation.

17. Basin Electric shall comply with all applicable requirements of 40 CFR 60 Subpart Da for the PC Boiler.

18. Basin Electric shall comply with all applicable requirements of 40 CFR 60 Subpart Y for all coal processing and conveying equipment, coal storage systems, and coal transfer and loading systems.

19. Basin Electric shall comply with all applicable requirements of 40 CFR 63, Subpart ZZZZ for the 2377 hp diesel emergency generator.

20. Basin Electric shall comply with all applicable requirements of 40 CFR 63, Subpart DDDDD for the 8.36 MMBtu/hr Inlet Gas Heater and 134 MMBtu/hr Auxiliary Boiler.

21. The 2377 hp diesel emergency generator and 360 hp diesel fire pump shall comply with the following:

A) The emergency generator and fire pump shall be certified to meet U.S. EPA Tier II emission standards. Records of the certification shall be maintained and made available to the Division upon request.

B) The emergency generator and fire pump shall each be limited to 500 hours of operation per year. Records documenting the annual operating hours shall be maintained and made available to the Division upon request.

22. Basin Electric shall use a wet handling system for ash/FGD waste load-out. The moisture content of the ash/FGD waste shall be maintained at a high enough concentration to prevent visible emissions from the haul trucks transporting the ash/FGD waste to the landfill. Basin Electric shall record and maintain records of the quantity of water supplied to the wet handling system and the quantity of ash/FGD waste loaded each calendar month. At the end of each calendar month, Basin Electric shall calculate the moisture content of the ash/FGD waste by dividing the mass of water used by the mass of ash/FGD waste and water combined. Ash/FGD waste shall be entirely enclosed in the haul trucks whenever the wet handling system is not operating. Basin Electric shall maintain records of dates that the wet handling system is not operating and whether or not haul trucks are covered.

23. Unpaved haul roads will be treated with suitable chemical dust suppressants in addition to water to control fugitive dust emissions. All treated roads will be maintained on a continuous basis to the extent that the surface treatment remains viable as a control measure.

24. Basin Electric shall comply with acid rain program regulations in WAQSR, Chapter 11, Section 2.

25. Records required by any applicable regulation or permit condition shall be maintained for a minimum period of five (5) years and shall be readily accessible to Division representatives.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 3, 5, 6 and 7. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

David A. Finley
Administrator
Air Quality Division

John V. Corra
Director
Dept. of Environmental Quality

cc: Mike Warren

Exhibit 6

SPECIAL CONDITIONS

Permit Numbers 70492 and PSD-TX-1037

EMISSION STANDARDS, FUEL SPECIFICATIONS, AND OTHER LIMITATIONS

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and those sources are limited to the emission limits and other conditions specified in that attached table. Compliance with the annual emission limits shall be based on throughput for a rolling 12-month year rather than the calendar year.

2. Emission limits are based upon in the permit application representations dated November 2003 and subsequent submittals dated; July 2004 (Supplemental to Application), September 2004 (Air Quality Analysis), and October 2004 (Air Quality Analysis Supplement).

FEDERAL APPLICABILITY

3. These facilities shall comply with applicable requirements of the EPA regulations in 40 CFR Part 60 on Standards of Performance for New Stationary Sources promulgated for:

   A. Applicable General Conditions, Subpart A.

   B. The Spruce 2 Utility Boiler is subject to the applicable requirements of Subpart Da, Standards of Performance for Electric Utility Steam Generating Units.

   C. The coal handling facilities shall comply with all applicable requirements of Subpart Y, Standards of Performance for New Stationary Sources promulgated for coal preparation plants.

UTILITY BOILER FUEL SPECIFICATIONS, OPERATING LIMITATIONS, PERFORMANCE STANDARDS, AND CONSTRUCTION SPECIFICATIONS

4. Fuel fired in the Spruce 2 Utility Boiler shall be limited to:

   A. Low sulfur subbituminous coal with a sulfur (S) content not to exceed an annual average of 0.625 lb S/MMBtu heat input and with the trace metal concentrations not to exceed the concentration limitation identified in Attachment A.

   B. Sweet natural gas as defined in Title 30 Texas Administrative Code Chapter 101 (30 TAC Chapter 101).

   Use of any other fuel will require prior approval from the permitting authority. Upon request by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) or any air pollution control program having jurisdiction, the holder of

this permit shall provide a sample and/or an analysis of the fuel fired in the utility boiler or shall allow air pollution control agency representatives to obtain a sample for analysis.

5. The Spruce 2 Utility Boiler shall be limited to a maximum heat input of 8,000 million British thermal units per hour (MMBtu/hr), averaged over a 30 day period, based on the higher heating value (HHV) of the fuel fired.

6. Opacity of emission from the utility boiler must not exceed 10 percent as determined by EPA Reference Method 9 or by COMS as required by Special Condition No. 10 averaged over a six-minute period, except for those periods as described by 30 TAC § 111.111(a)(1)(e), 30 TAC §§ 101.201 and 101.211, 40 CFR Part 60, § 60.11(c), or as otherwise allowed by law.

7. Emissions from the Spruce 2 Utility Boiler exhausting through EPN U-6 shall not exceed the heat input-based performance standards identified in the table below. The heat input shall be based upon the higher heating value of the fuel. The performance standards of this permit condition shall apply at all times except during periods of start-up, shutdown, maintenance or malfunctions (SSMM). During periods of SSMM, the holder of this permit shall operate the Spruce 2 Utility Boiler and associated air pollution control equipment in accordance with good air pollution control practices to minimize emissions. The permit holder shall retain records of SSMM periods in which the emission specification identified below are exceeded and shall identify all measures taken to mitigate emissions. Initial compliance with the performance standards of this special condition shall be demonstrated in the initial determination of compliance stack sampling utilizing EPA Reference Method testing and shall be determined based upon the average of three stack sampling test runs. Continuous compliance thereafter shall be either via CEMS or COMS for the pollutants monitored by CEMS or COMS or via stack sampling described by Special Condition No. 25. The averaging periods identified in the table shall be the basis for continuous compliance.

Pollutant	**Performance Standard**	**Averaging Period**	**Compliance Method**
Nitrogen Oxides (NO_x)	0.069 lb/MMBtu	30-day roll	CEMS[1]
NO_x	0.05 lb/MMBtu	12-month roll	CEMS[1]
Sulfur Dioxide (SO_2)	0.10 lb/MMBtu	30-day roll	CEMS[1]
SO_2	0.06 lb/MMBtu	12-month roll	CEMS[1]
Carbon Monoxide (CO)	0.15 lb/MMBtu	12-month roll	CEMS[1]
Opacity	10%	six minutes	COMS[2]
Ammonia (NH_3)	0.0063 lb/MMBtu	hourly	Stack sample[3]

Particulate Matter, PM_{10}	0.015 lb/MMBtu[4] 0.022 lb/MMBtu[5]	annual	Stack sample[3]
Lead (Pb)	8.4E-06 lb/MMBtu	annual	Stack sample[3]
Hydrogen Fluoride (HF)	0.0008 lb/MMBtu	annual	Stack sample[3]
Sulfuric Acid Mist (H_2SO_4)	0.0037 lb/MMBtu	annual	Stack sample[3]
Mercury (Hg)	2E-05 lb/MWh	annual	Stack sample[3]
Hydrogen Chloride (HCl)	0.0019 lb/MMBtu	annual	Stack sample[3]
Volatile Organic Compounds (VOC)	0.0025 lb/MMBtu	annual	Stack sample[3]

Notes:
[1] CEMS - Continuous Emission Monitoring System. CEMS are subject to the requirements of Special Condition No. 21.
[2] COMS - Continuous Opacity Monitoring System. COMS are subject to the requirements of Special Condition No. 22.
[3] Stack sampling is the average of three stack sampling runs to be conducted as prescribed by Special Conditions No. 20.
[4] Particulate Matter emission rate is for front half only excluding back half condensibles
[5] Particulate Matter emission rate is for front and back-half condensibles, for the concentration of particulate matter less than 10 microns in diameter PM_{10}

8. In the event that the Continuous Emissions Monitoring Systems (CEMS) for NO_x or SO_2 are not operating (except when the CEMS are down for planned QA/QC procedures), the permit holder shall operate at the minimum ammonia feed rate to the selective catalytic reduction system and the minimum sorbent feed rate to the flue gas desulfurization system, or at the pH levels, that were established during a successful initial performance test (adjusted for load) or at the feed rates that were measured prior to the loss of the CEMS, which ever feed rates are higher.

9. The Spruce 2 Utility Boiler Stack, EPN U-6, will be approximately 600 feet tall and 29 feet in diameter. Stack sampling ports and platform(s) shall be constructed on the stack as specified in the attachment entitled “Chapter 2, Stack Sampling Facilities,” or an alternate design may be required at a later date if determined necessary by the

TCEQ Regional Director or the Manager of the TCEQ Austin Enforcement Division, Compliance Support Team.

10. Emergency Generators, EPN EMGEN-1 and EMGEN-2, shall be limited to a maximum of 60 non-emergency hours per year and these generators shall be limited to firing distillate fuel oil containing no more than 0.1 percent sulfur by weight.

AMMONIA (NH_3) STORAGE

11. The service of NH_3 storage tanks represented in this permit is limited to the storage of aqueous NH_3 only.

12. Audio, olfactory, and visual checks for NH_3 shall be made once per day within the operating area.

A. No later than one hour following detection of a leak, plant personnel shall take the following actions:

(1) Locate and isolate the leak.

(2) Use a leak collection/containment system to control the leak until repair or replacement can be made.

B. Within 24 hours of detection of a leak, plant personnel shall commence repair or replacement of the leaking component as appropriate.

MATERIAL HANDLING OPERATING LIMITATIONS AND STANDARDS

13 Annual throughput of coal received at the Calvaeras Lake site shall not exceed 15 million tons per year. Coal may be delivered at either of the two rotary car dumper buildings which shall be partially enclosed as described in the application.

14 Fugitive emissions from the transfer points on belt conveyors, any material handling, or the stockpile activities shall not create an off- property nuisance condition. A trained observer with delegation from the Executive Director of the Texas Commission on Environmental Quality (TCEQ) may determine by EPA Reference Method 22 or equivalent compliance with this special condition. Continuous demonstration of compliance with this special condition is not required. If this condition is violated, additional controls or process changes may be required to limit visible PM emissions.

15. As determined by a certified opacity observer with delegation from the Executive Director of the TCEQ and according to EPA Reference Method No. 9 or equivalent,

opacity of emissions from any single fabric filter baghouse stack listed in Special Conditions No. 19 shall not exceed 5 percent averaged over a six-minute period. Continuous demonstration of compliance with this special condition is not required.

16. All conveyors shall be covered or enclosed to minimize fugitive particulate matter (PM) emissions except the stacker/reclaim conveyor. If visibility problems occur, additional controls may be required. Covering and enclosures are considered abatement equipment, and should be kept in good repair.

17. A watering truck and/or the coal yard watering system shall be used to minimize dust emissions from the coal storage pile area.

18 The combined active and inactive stockpiles of coal, sludge/ash landfill, and limestone stockpiles shall be limited to 55 acres, 26 acres, and 1 acre, respectively. If spontaneous combustion occurs in the coal stockpile, plant personnel will begin efforts as a soon as possible to extinguish the fires, except when extinguishing stockpile fires may unduly jeopardize the safety of plant personnel and equipment or may cause the fire to spread, in which case these stockpile fires may be permitted to burn themselves out.

19. Baghouses, properly installed and in good working order, shall control PM emissions from the following emission point numbers (EPNs):

Emission Point No.	Source
FAS3	Fly Ash Silos for Spruce Unit 1
FAS4	Fly Ash Silos for Spruce Unit 2
EAS4	Economizer Ash Silo for Spruce Unit 2
LDC-12	Limestone Receiving Baghouse
LDC-10	Limestone Silos
PX-CO1A/B	Railcar No.1 Unloading and Transfer Baghouse
DC-15	Railcar No.2 Unloading and Transfer Baghouse
DC-1	Transfer Building 1
DC-2	South Reclaim Hopper to Conveyor 4
DC-3	Transfer Building 1a
DC-CCG016	Crusher Building 1
DC-4A	Silo Group A Headhouse
DC-4B	Silo Group A Unloading
DC-5	Crusher Building 2
DC-6	North Reclaim Hopper to Conveyor 23B
DC-7	Transfer Building 4
DC-9	Transfer Building 6
DC-10	Transfer Building 7

DC-11	Silo Group B Headhouse
DC-12	Silo Group B Loadout
DC-13	Transfer Building 9
DC-14	Transfer Building 1B
DC-101	Unit 1 Transfer Building 5 and Tripper Deck
DC-201	Unit 2 Transfer Building 8 and Tripper Deck

INITIAL DEMONSTRATION OF COMPLIANCE

20. The holder of this permit shall perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere from the Spruce 2 Utility Boiler stack, EPN U-6. Newly constructed coal handling facilities shall be tested to demonstrate compliance with 40 CFR Part 60, Subpart Y.

A. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual, EPA Methods in 40 CFR Part 60, Appendix A and 40 CFR Part 51, Appendix M, and American Society for Testing and Materials (ASTM) as follows:

(1) Methods 201A and 202, or Reference Method 5, modified to include back-half condensibles, for the concentration of particulate matter less than 10 microns in diameter PM_{10};

(2) Reference Method 8 or Reference Methods 6 or 6c for SO_2;

(3) Reference Method 9 for opacity (consisting of 30 six-minute readings as provided in 40 CFR § 60.11[b]);

(4) Reference Method 10 for the concentration of CO;

(5) Reference Method 25A, modified to exclude methane and ethane, for the concentration of volatile organic compounds (VOC) (to measure total carbon as propane);

(6) Reference Method 7E for the concentrations of NO_x and O_2 or equivalent methods;

(7) Reference Method 8 or a modified Method 8 for H_2SO_4;

(8) Reference Method 26 or 26A for HCl and HF;

(9) Reference Method 29 for Total Selected Metals identified in C. of this

condition; and

(10) ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound, and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (also known as the Ontario Hydro Method), or other approved EPA methods.

Any deviations from those procedures must be approved by the Executive Director of the TCEQ prior to sampling. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling. The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

B. The TCEQ San Antonio Regional Office shall be contacted as soon as testing is scheduled but not less than 30 days prior to sampling to schedule a pretest meeting. The notice shall include:

(1) Date for pretest meeting.
(2) Date sampling will occur.
(3) Name of firm conducting sampling.
(4) Type of sampling equipment to be used.
(5) Method or procedure to be used in sampling.
(6) Procedure used to determine turbine loads during and after the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports. The permit holder shall present at the pretest meeting the manner in which stack sampling will be executed in order to demonstrate compliance with emission standards found in 40 CFR Part 60, Subparts Da, and Y. A written proposed description of any deviation from sampling procedures specified in permit conditions or TCEQ, EPA or ASTM sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director or the TCEQ Austin Compliance Support Division shall approve or disapprove of any deviation from specified sampling procedures. Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division. Test waivers and alternate or equivalent procedure proposals for New Source Performance Standards testing which must have the EPA approval shall be submitted to the TCEQ Austin Compliance Support Division.

C. Air contaminants from the utility boiler stack, EPN U-6, to be sampled and analyzed include: NO_x, SO_2, CO, VOC, H_2SO_4, HCl, HF, PM_{10}, NH_3, Pb, Hg, opacity, total selected metals. Diluents to be measured include oxygen (O_2) or carbon dioxide (CO_2). Total selected metals means the combination of the following metallic hazardous air pollutants: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium. Newly constructed coal handling facilities subject to 40 CFR Part 60, Subpart Y shall be tested for opacity.

D. Sampling as required by this condition shall occur within 60 days after achieving the maximum fuel firing rate at which the new Spruce 2 Utility Boiler will be operated but no later than 180 days after initial start-up.

E. Two copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached conditions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ San Antonio Regional Office.
One copy to the TCEQ Austin Office of Permitting, Remediation, and Registration, Air Permits Division.

CONTINUOUS DEMONSTRATION OF COMPLIANCE

21. The holder of this permit shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) to measure and record the concentrations of NO_x, CO, SO_2 from EPN U-6. Diluents to be measured include O_2 or CO_2. The continuous monitoring data shall also be used to determine compliance with the emission limitations in the attached maximum allowable emission rates table.

A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B or an acceptable alternative. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division in Austin for requirements to be met.

B. The holder of this permit shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1, or an acceptable alternative. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime and all cylinder gas audit exceedances of ±15 percent accuracy shall be reported

semi-annually to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

C. The monitoring data shall be reduced to hourly average concentrations at least once everyday, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emission rate in pounds per hour at least once everyday. Pound per hour data shall be summed on a monthly basis to TPY and used to determine compliance with the annual emissions limits of this permit. If the CEMS malfunctions, then the recorded concentrations may be reduced to units of the permit allowable as soon as practicable after the CEMS resumes normal operation.

D. All required monitoring data and quality-assurance data shall be maintained by the source for a period of five years and shall be made available to the TCEQ Executive Director or his designated representative upon request.

E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required relative accuracy test audits in order to provide them the opportunity to observe the testing.

F. If applicable, each CEMS will be required to meet the design and performance specifications, pass the field tests, and meet the installation requirements and data analysis and reporting requirements specified in the applicable performance specifications in 40 CFR Part 75, Appendix A and B, as an acceptable alternative to Special Condition 21 A, B, and E.

22. The owner or operator of the facility shall install, calibrate, operate, and maintain a continuous opacity monitoring system (COMS) to measure and record the opacity of emissions from the Spruce 2 Utility Boiler.

A. The COMS may be located where no interference with opacity readings will be experienced due to water droplets from the FGD system. The COMS shall satisfy all of the Federal NSPS requirements for COMS as specified in 40 CFR Part 60, Appendix B, Performance Specification 1 (PS-1). In order to demonstrate compliance with PS-1, the COMS shall meet the manufacturer's design and performance specifications, and undergo performance evaluation testing as outlined in 40 CFR 60, Subpart A, § 60.13. The TCEQ Regional Director shall be notified 30 days prior to the certification.

B. The COMS shall be zeroed and spanned daily as specified in 40 CFR Part §

60.13. Corrective action shall be taken when the 24-hour span drift exceeds two times the amounts specified in PS-1, or as specified by the TCEQ if not specified in PS-1.

C. If the EPA promulgates a quality assurance, quality control standard for the COMS, a Quality Assurance Plan shall be prepared and maintained in accordance with the EPA standard for the COMS within six months. At the request of the TCEQ Regional Director, the holder of this permit shall submit documentation demonstrating compliance with these standards.

D. The data shall be reduced to six-minute opacity averages, using a minimum of 36 equally-spaced data points from each six-minute period.

E. Data including all periods of operation, all monitoring data, and quality-assurance data shall be maintained and made available on request to representatives of the TCEQ and any local air pollution program having jurisdiction, and shall be retained for at least two years following the date that the data is obtained.

F. If the COMS exceeds greater than 5 percent downtime for the reporting quarter, the owner/operator shall develop and implement a monitor quality improvement plan. The plan should address the downtime issues to improve availability and reliability. The plan should provide additional assurance of compliance including EPA Reference Method 9 support during daytime monitor downtime periods and parametric support for nighttime monitor downtime periods.

G. For Special Condition No. 22A and B, the COMS shall meet the applicable requirements of 40 CFR Part 60, Appendix B, PS-1 upon certification and/or recertification where compliance is based on the regulation in effect at the time of initial certification of the system.

23. If any emission monitor fails to meet specified performance, it shall be repaired or replaced as soon as reasonably possible.

24. Compliance stack sampling for pollutants that are not monitored with a CEMS or COMS that are identified in Special Condition No. 7 shall occur once annually. If after two years of stack sampling, the average of the two stack sampling results per pollutant is below 70% of the performance standard identified in Special Condition No. 7, then compliance stack sampling for the specific pollutant may be conducted once every three years.

<u>EMISSION REDUCTION AND NETTING</u>

25. The permit holder will net out of PSD review for NO_x and SO_2. The reduction of emissions relied upon for netting shall occur not later than the commencement of operation of the Spruce Unit 2 Utility Boiler. The permit holder will upgrade the wet limestone scrubbing system serving J.K. Spruce Unit 1 to generate SO_2 reductions. Upon completion of the upgrades to Spruce Unit 1, the combined SO_2 emissions from Spruce Unit 1 and Spruce Unit 2 shall not exceed a total of 4,319 tons per year. The permit holder will over control NO_x emissions from J.T. Deely Units 1 and 2, Spruce Unit 1, and O.W. Sommers Units 1 and 2 to generate NO_x reductions. The permit holder will over control NO_x emissions such that the combined total emissions from J.T. Deely Units 1 and 2, Spruce Unit 1 and 2, and O.W. Sommers Units 1 and 2, shall not exceed 10,454 tons per year of NO_x.

RECORDKEEPING REQUIREMENTS

26. The following records shall be kept at the plant for the life of the permit. All records required in this permit shall be made available at the request of personnel from the TCEQ, the EPA, or any air pollution control agency with jurisdiction.

    A. A copy of this permit.

    B. Permit application dated November 2003 and subsequent representations submitted to the TCEQ.

    C. A complete copy of the testing reports and records of the initial performance testing completed pursuant to Special Condition No. 12 to demonstrate initial compliance.

    D. Required stack sampling results or other air emissions testing (other than CEMS or COMS data) that may be conducted on units authorized under this permit after the date of issuance of this permit.

27. Records shall be kept for a minimum of five (5) years after collection and shall be made immediately available upon request to representatives of the TCEQ, the EPA, or any local air pollution control program having jurisdiction. The most recent two (2) years shall be maintained on-site and shall be available for inspection. The remaining three (3) years of records may be maintained off site. Records shall be legible and maintained in an orderly manner. The following records shall be maintained:

    A. Continuous emission monitoring data for opacity, SO_2, NO_x, CO, and diluent gases, O_2 or CO_2, from CEMS or COMS to demonstrate compliance with the

emission rates listed in the maximum allowable emission rates table (MAERT) and performance standards listed in Special Condition No. 6 and 7 for pollutants that are monitored by CEMS or COMS. Records should identify the times when emissions data have been excluded from the calculation of average emission rates because of startup, shutdown, maintenance, and malfunction along with the justification for excluding data. The permit holder shall retain additional records of SSMM periods in which the emission specification identified in Special Condition No. 7 are exceeded and shall identify all measures taken to mitigate emissions. All records should also identify factors used in calculations that are used to demonstrate compliance with emissions limits and performance standards.

B. Raw data files of all continuous emission monitoring including calibration checks and adjustments and maintenance performed on these systems.

C. Records of coal analysis and analysis provided by natural gas suppliers to show compliance with Special Condition No. 4A and 4B.

D. Records of the average coal feed rate to the Spruce 2 Utility Boiler in pounds per hour and the corresponding average heat input (HHV) in MMBtu/hr, based upon an average over a 30 day period, to show compliance with Special Condition No.5.

E. Records of ammonia feed rate, sorbent feed rate, and pH established during the initial determination of compliance stack sampling to fulfill the requirements of Special Condition No. 8.

F. Records of the hours of operation of the emergency generators to show compliance with Special Condition No. 10.

G. Records of the coal received at Calaveras Lake site to show compliance with Special Condition No. 13.

H. Records of cleaning and maintenance performed on abatement equipment including records of replacement maintenance performed on baghouses and conveyors.

I. Records of NO_x and SO_2 emissions from other combustion units identified in Special Condition No. 25 to show compliance with the emissions cap in the MAERT and with the emissions reductions required by Special Condition No. 25.

J. Records required to show compliance with 40 CFR part 60, Subparts Da and Y, including records of required reporting.

REPORTING

28. The holder of this permit shall submit to the TCEQ San Antonio Regional Office and the Air Enforcement Branch of EPA in Dallas semi-annual reports as described in 40 CFR § 60.7. Such reports are required for each emission unit which is required to be continuously monitored pursuant to this permit.

OPTIMIZATION STUDIES

29. If the permit holder is unable to demonstrate initial compliance with the Spruce 2 Utility Boiler performance standards for the control of NO_x, Hg, H_2SO_4, and PM_{10} identified in Special Condition NO. 7 within the time allotted for in this permit, then the permit holder may request additional time for an emissions optimization study to mitigate emissions from the unit. Optimization studies may be requested by the permit holder to evaluate and implement additional efforts to mitigate the emissions of NO_x, Hg, H_2SO_4, and PM_{10}. Exceedances of any emission limit that occur during an approved optimization study is not a violation of the emission limits set forth for NO_x, Hg, H_2SO_4, and PM_{10} in this permit as long as the owner or operator maintains and operates the equipment and control equipment at all times in a manner consistent with good practice for minimizing emissions. The following conditions shall be met for the studies:

    Prior to the initiation of optimization studies, a protocol shall be developed and approved by the Executive Director of the TCEQ. The protocol shall include at a minimum a proposed duration of the study period and an explanation of control efforts that will be evaluated. Additionally, the protocol will include a description of the specific testing that will be used to evaluate emissions during the optimization study. All stack testing done for this optimization study shall be coordinated with the TCEQ Regional Office.

    A report summarizing the results of the optimization study shall be submitted to the TCEQ within forty-five (45) days after the completion of the individual optimization study. This report shall include a summary of the effort utilized to mitigate emissions and the resulting emission rates measured during the study, as well as a listing of actions that will be undertaken by the permit holder to achieve the emission standard listed in Special Condition No. 7.

    All optimization studies shall be completed within 12 months of the initial demonstration of compliance stack testing.

Dated

Attachment A
Trace Metal Concentrations

Constituent	Maximum Concentrations (ppmw)
Mercury	0.49
Beryllium	6.3
Lead	11.55
Arsenic	9.45
Cadmium	4.52
Vanadium	326
Nickel	47.3
Silver	2.64
Barium	1019
Chromium	77.7
Cobalt	42
Manganese	158
Antimony	5.25
Selenium	5.3
Zinc	231

Exhibit 7

AIR QUALITY PERMIT

Permit No. **Effective Date**
4911-099-0030-P-01-0 **May 14, 2007**

In accordance with the provisions of the Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Rules, Chapter 391-3-1, adopted pursuant to or in effect under that Act,

Longleaf Energy Associates, LLC
C/o LS Power Development, LLC
Two Tower Center, 11th Floor
East Brunswick, New Jersey 08816

Is issued a Permit for the following: To construct and operate a nominal 1,200 MW coal fired generating station. The facility would consist of two coal (PC) fired boilers, a 175 MMBtu/hr auxiliary boiler, two steam turbines, one 1500 kW emergency generator, one 450 Hp diesel fueled fire pump, one distillate fuel oil storage tank, and cooling towers. The facility will be designed to burn Powder River Basin (PRB) coal and/or Central Appalachian coal. In addition, the facility may burn small quantities of clarifier sludge produced at Georgia Pacific's nearby Cedar Springs containerboard mill. Ultra low sulfur distillate fuel oil will be used as the start-up fuel for the two PC units and for operation of the auxiliary boiler, emergency equipment.

Facility location: Longleaf Energy Station
State Highway 370
Hilton, Georgia 31723 (Early County)

This Permit is conditioned upon compliance with all provisions of The Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq. the Rules, Chapter 391-3-1, adopted or in effect under that Act, or any other condition of this Permit.

This Permit may be subject to revocation, suspension, modification or amendment by the Director for cause including evidence of noncompliance with any of the above; or for any misrepresentation made in the application dated **November 22, 2004 [Application No. 15846]**, additional information listed in Note A, and supporting data entered therein or attached thereto, or any subsequent submittals or supporting data; or for any alterations affecting the emissions from this source.

This Permit is further subject to and conditions upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached **29** pages, which **29** pages are a part of this Permit.

_____
Director
Environmental Protection Division

NOTE A

Subsequent Submittals of Application No. 15846 dated November 22, 2004

Date	Description
November 22, 2004	Original Application Submittal
March 30, 2005	Modification of HF and HCl Emissions and PSD Preconstruction Monitoring Applicability
April 13, 2005	Docket Information on EPA HF/HCl Removal Memo
July 12, 2005	Response to EPD letter requesting clarifications to the original application
August 15, 2005	Longleaf provided answers to the remaining concerns and updated BACT determinations for pollutants which were influenced by the two different types of coal - i.e. SO_2, Lead, HF, and H_2SO_4.
February 23, 2006	Updated SO_2 BACT limits with justification.
February 28, 2006	Updated BACT analysis for NOx and PM/PM_{10} to include economics analysis for top technologies
March 10, 2006	Longleaf submitted updated BACT analysis for auxiliary boiler.

NOTE B

FACIILTY DESCRIPTION

Emission Units		Air Pollution Control Devices	
ID No.	Description	ID No.	Description
Combustion Sources			
S01	PC-Fired Boiler – 600 MW	LN1 CR1 DS1 F01	Low NOx Burners/Over-fire Air Selective Catalytic Reduction Dry Scrubber Fabric Filter Baghouse
S02	PC-Fired Boiler – 600 MW	LN2 CR2 DS2 F02	Low NOx Burners/Over-fire Air Selective Catalytic Reduction Dry Scrubber Fabric Filter Baghouse
S03	Auxiliary Boiler – 175 MMBtu/hr	LN3	Low NOx Burner/Flue Gas Recirculation
Coal Handling Particulate Sources			
S06	Railcar Unloading Station	N/A	Water sprays and partial enclosure
S07	Stackout Conveyor # 1	N/A	Partial enclosure
S08	Stackout Transfer Point #1	N/A	Partial enclosure
S09	Stackout Conveyor #2	N/A	Partial enclosure
S10	Stackout Transfer Point #2	N/A	Telescopic chute
S11	Active Pile #1	N/A	Water Sprays
S12	Active Pile #2	N/A	Water Sprays
S13	Active Pile Reclaim	N/A	Partial enclosure
S14	Reclaim Conveyor #1	N/A	Partial enclosure

Emission Units		Air Pollution Control Devices	
ID No.	Description	ID No.	Description
S15	Transfer Tower	N/A	Partial enclosure and fabric filter
S16	Reclaim Conveyor #2	N/A	Partial enclosure
S17	Tripper Deck	N/A	Partial enclosure and fabric filter
S18	Inactive Pile	N/A	Water spray and chemical dust suppression
Ash Management Particulate Sources			
S19	Submerged Chain Conveyors	N/A	Partial enclosure and material moisture content
S20	Bottom Ash Transfer Point #1	N/A	Material moisture content
S21	Bottom Ash Conveyor	N/A	Partial enclosure and material moisture content
S22	Bottom Ash Bunker	N/A	Partial enclosure and material moisture content
S23	Bottom Ash Transfer Point #2	N/A	Material moisture content
S24	Bottom Ash Truck	N/A	Material moisture content
S25	Bottom Ash Transfer Point #3	N/A	Material moisture content
S26	Fly Ash Silo	N/A	Fabric Filter
S27	Fly Ash Mixing Station	N/A	Fabric Filter
S28	Fly Ash Transfer Point #1	N/A	Material moisture content
S29	Fly Ash Truck	N/A	Material moisture content
S30	Fly Ash Transfer Point #2	N/A	Material moisture content
S31	On-Site Disposal Facility	N/A	Water sprays and chemical suppressant

Emission Units		Air Pollution Control Devices	
ID No.	Description	ID No.	Description
Lime Management Particulate Sources			
S35	Lime Railcar Unloading Station	N/A	Partial enclosure and fabric filter
S36	Lime Conveyor	N/A	Partial enclosure
S37	Lime Silo	N/A	Partial enclosure and fabric filter
Roadway Particulate Sources			
S38	Unpaved Roadway Travel	N/A	Gravel or chemical dust suppressant and water sprays
S39	Paved Roadway Travel	N/A	Water sprays and/or sweeping
Cooling Tower Emissions			
S40	Unit 1 Cooling Tower	N/A	Drift eliminators
S41	Unit 2 Cooling Tower	N/A	Drift eliminators
Emergency Diesel Fired Engines			
S42	1500 kW Diesel Generator	N/A	N/A
S43	450 hp Diesel Firewater Pump	N/A	N/A
Fuel Storage Tanks			
S44	330,000 Gallon Distillate Oil Storage Tank	N/A	N/A
S45	15,000 Gallon Distillate Fuel Storage Tank	N/A	N/A
S46	2,000 Gallon Diesel Fuel Storage Tank	N/A	N/A
S47	500 Gallon Diesel Fuel Storage Tank	N/A	N/A
S48	150 Gallon Unleaded Gasoline Storage Tank	N/A	N/A

1.0 General Requirements

1.1 At all times, including periods of startup, shutdown, and malfunction, the Permittee shall to the extent practicable maintain and operate this source, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

1.2 The Permittee shall cause to be conducted a performance test at any specified emission unit when so directed by the Environmental Protection Division ("Division"). The test results shall be submitted to the Division within 60 days of the completion of the testing. Any tests shall be performed and conducted using methods and procedures that have been previously specified or approved by the Division.
[391-3-1-.02(6)(b)1(i)]

1.3 The Permittee shall provide the Division thirty (30) days (or sixty (60) days for tests required by 40 CFR Part 63) prior written notice of the date of any performance test(s) to afford the Division the opportunity to witness and/or audit the test, and shall provide with the notification a test plan in accordance with Division guidelines.
[391-3-1-.02(3)(a)]

1.4 Notwithstanding any other provisions of any applicable rule or regulation or requirement of this permit, for the purpose of establishing whether or not a person has violated or is in violation of any emissions limitation or standard, nothing in this permit or any Emission Limitation or Standard to which it pertains, shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. [391-3-1-.02(3)(a)]

1.5 The Permittee shall comply with all applicable provisions of National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR 61, Subpart E – "National Emission Standard for Mercury" the when PC-Fired Boilers, S01 and S02, are firing clarifier sludge. [40 CFR 61.50]

1.6 The Permittee shall comply with all applicable provisions of the National Emission Standard for Hazardous Air Pollutants (NESHAP) as found in 40 CFR Part 63, in Subpart A – "General Provisions".
[40 CFR 63, Subpart A]

1.7 The Permittee shall comply with all applicable provisions of 40 CFR 63, Subpart DDDDD – "NESHAP for Industrial/Commercial/Institutional Boilers and Process Heaters" for the auxiliary boiler, S03. In the event of any discrepancy between the terms of this Permit and 40 CFR Part 63, Subpart DDDDD, the terms of 40 CFR Part 63, Subpart DDDDD shall control.
[40 CFR 63.2231]

1.8 The Permittee shall comply with all applicable provisions of the New Source Performance Standard (NSPS) as found in 40 CFR Part 60, in Subpart A – "General Provisions".
[40 CFR 60, Subpart A]

1.9 The Permittee shall comply with all applicable provisions of the New Source Performance Standard (NSPS) as found in 40 CFR Part 60, in Subpart Da – "Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 18, 1978" for PC-Fired Boilers, S01 and S02.
[40 CFR 60, Subpart Da]

1.10 The Permittee shall comply with all applicable provisions of the New Source Performance Standard (NSPS) as found in 40 CFR Part 60, in Subpart Db – "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units" for the auxiliary boiler, S03.
[40 CFR 60, Subpart Db]

1.11 The Permittee shall comply with all applicable provisions of the New Source Performance Standard (NSPS) as found in 40 CFR Part 60, in Subpart Y – "Standards of Performance for Coal Preparation Plants" for the coal conveying and processing equipment and the coal silos.
[40 CFR 60, Subpart Y]

1.12 The Permittee shall comply with all applicable provisions of 40 CFR 63, Subpart ZZZZ – "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines" for the emergency diesel generator, S42 and emergency firewater pump, S43. In the event of any discrepancy between the terms of this Permit and 40 CFR 63, Subpart ZZZZ, the terms of 40 CFR 63, Subpart ZZZZ shall control.

2.0 Allowable Emissions

Note: Except where an applicable requirement specifically states otherwise, the averaging times of any of the Emissions Limitations or Standards included in this permit are tied to or based on the run time(s) specified for the applicable reference test method(s) or procedures required for demonstrating compliance.

2.1 The Permittee shall commence construction within 18 months of the date of issuance of this Permit. In the event that construction of any of these units has not commenced in the time frame specified, and absent approval by the Division for an extension of the commencement date, this Permit shall become null and void with respect to that unit and all units yet to be constructed. For purposes of this Permit, the definition of "commence" is given in 40 CFR 52.21(b)(9). [40 CFR 52.21(r)]

2.2 The construction of PC-Fired Boilers S01 and S02, Auxiliary Boiler S03, Emergency Generator S42, Diesel Fire-water pump S43, Coal handling particulate sources (Emission Unit IDs S06 – S18), Ash management particulate sources (Emission Unit IDs S19 – S31), Lime management particulate sources (Emission Unit IDs S35 – S37), Cooling Towers (Emission Unit IDs S40 and S41), and Fuel Storage Tanks (Emission Unit IDs S44 – S48) shall be completed no later than December 31, 2013. In the event that construction of any of these units is not completed by the date specified, and absent approval by the Division for an extension of the completion date, this Permit shall become null and void with respect to that unit and all units yet to be constructed. The Permit will remain in full force and effect with regard to any units for which construction has been completed by the applicable construction deadline.
[40 CFR 52.21(r)(2)]

2.3 The Permittee shall install and operate, as BACT for NO_x on each PC-Fired Boiler, S01 and S02, dry low NO_x burners, Over-fire Air and Selective Catalytic Reduction.
[40 CFR 52.21(j)]

2.4 The Permittee shall install and operate, as BACT for CO and VOC on each PC-Fired Boiler, S01 and S02, good combustion practices. [40 CFR 52.21(j)]

2.5 The Permittee shall install and operate, as BACT for SO_2, HF, and H_2SO_4 on each PC-Fired Boiler, S01 and S02, a dry scrubber. [40 CFR 52.21(j)]

2.6 The Permittee shall install and operate, as BACT for PM/PM_{10} and Lead on each PC-Fired Boiler, S01 and S02, a fabric filter baghouse. [40 CFR 52.21(j)]

2.7 The Permittee shall install and operate, as BACT for Mercury on each PC-Fired Boiler, S01 and S02, Halogenated Activated Carbon Injection. [40 CFR 52.21(j)]

2.8 The Permittee shall install and operate, as BACT for NOx on Auxiliary Boiler, S03, dry low NOx burners and Flue Gas Recirculation (FGR). [40 CFR 52.21(j)]

2.9 The Permittee shall install and operate, as BACT for Fly Ash Silo, S26, and Lime Silo, S37, enclosures and vent filters.
[40 CFR 52.21(j)]

2.10 Except as provided in Condition No. 2.12 the Permittee shall primarily fire PRB Coal, CAPP Coal, and/or clarifier sludge in PC-Fired Boiler, S01 and S02. Blending of other sources of bituminous coal and/or pet coke shall be permitted subject to Conditions 2.11, 2.14 and 2.15.
[40 CFR 52.21(j); and 391-3-1-.02(2)(g)(subsumed)]

2.11 The Permittee shall not fire any fuel in PC-Fired Boilers, S01 and S02, that contains greater than 3.0 percent sulfur, by weight.
[391-3-1-.02(2)(g)2]

2.12 The Permittee shall fire only ultra low sulfur diesel fuel, which meets the specifications defined in Condition 2.13, in startup in PC-Boiler, S01 and S02, in auxiliary boiler S03, emergency generator S42 and firewater pump S43 unless ultra low sulfur diesel fuel is not commercially available. In that event, the Permittee shall use low sulfur diesel fuel which shall not contain more than 0.05 percent sulfur by weight.
[40 CFR 52.21(j); 40 CFR 60.333(b)(subsumed) and 391-3-1-.02(2)(g) (subsumed)]

2.13 Ultra low sulfur diesel (ULSD) fuel oil fired in startup in PC-Boiler, S01 and S02, in auxiliary boiler S03, emergency generator S42 and firewater pump S43 shall not contain more than 0.0015 percent sulfur by weight [which is equivalent to 15 ppm as defined in 40 CFR 80.520-527]. [40 CFR 52.21(j); 391-3-1-.02(2)(g) (subsumed)]

2.14 The Permittee shall not fire clarifier sludge in PC-Fired Boilers, S01 and S02, that contains greater than 1.0 percent of the potential total heat input or 61.4 MMBtu/hr in any calendar day.

2.15 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from each PC-Fired Boiler, S01 and S02, any gases which

a. Contain nitrogen oxides (NOx) in excess of 0.07 lb/MMBtu on a 30-day rolling average.
[40 CFR 52.21(j); 40 CFR 60.44Da(e)(1) (subsumed)]

b. Contain nitrogen oxides (NOx) in excess of 0.05 lb/MMBtu on a 12-month rolling average. This condition becomes effective 6 months after initial start-up of each PC-Fired boiler, S01 and S02, absent approval by the Division for an extension of this date.
[40 CFR 52.21(j); 40 CFR 60.44Da(e)(1) (subsumed)]

c. Contain carbon monoxide (CO) in excess of 0.15 lb/MMBtu on a 30-day rolling average and 0.30 lb/MMBtu on a 1-hour average.
[40 CFR 52.21(j)]

d. Contain particulate matter (PM) in excess of 0.012 lb/MMBtu for filterable particulate matter (PM) on a 3-hour average and 0.030 lb/MMBtu for total particulate matter on a 3-hour average.
[40 CFR 52.21(j); 391-3-1-.02(2)(d) (subsumed); 40 CFR 60.42Da(c) (subsumed)]

e. Contain sulfur dioxide in excess of 0.065 lb/MMBtu on a 30-day rolling average when the uncontrolled sulfur dioxide emission rate is less than or equal to 1 lb/MMBtu on a 30-day rolling average.
[40 CFR 52.21(j); 40 CFR 60.43Da(i)(l)(i) (subsumed); 391-3-1-.02(2)(d) (subsumed)]

f. Contain sulfur dioxide in excess of 0.08 lb/MMBtu on a 30-day rolling average when the uncontrolled sulfur dioxide emission rate is greater than 1 lb/MMBtu but less than 1.25 lb/MMBtu on a 30-day rolling average.
[40 CFR 52.21(j); 40 CFR 60.43Da(i)(l)(i) (subsumed); 391-3-1-.02(2)(d) (subsumed)]

g. Contain sulfur dioxide in excess of 0.105 lb/MMBtu on a 30-day rolling average when the uncontrolled sulfur dioxide emission rate is greater than 1.25 lb/MMBtu but less than 1.6 lb/MMBtu on a 30-day rolling average.
[40 CFR 52.21(j); 40 CFR 60.43Da(i)(l)(i) (subsumed); 391-3-1-.02(2)(d) (subsumed)]

h. Contain sulfur dioxide in excess of 0.12 lb/MMBtu on a 24-hour average.
[40 CFR 52.21(j); 40 CFR 60.43Da(i)(l)(i) (subsumed); 391-3-1-.02(2)(d) (subsumed)]

i. Contain volatile organic compounds (VOC) in excess of 3.6×10^{-3} lb/MMBtu, as methane, on a 3-hour average.
[40 CFR 52.21(j)]

j. Contain lead (Pb) in excess of 1.8×10^{-5} lb/MMBtu on a 3-hour average.
[40 CFR 52.21(j)]

k. Contain fluorides (as HF) in excess of 9.5×10^{-4} lb/MMBtu on a 3-hour average while firing PRB coal or 1.4×10^{-3} lb/MMBtu on a 3-hour average while firing CAPP Coal or a computed weighted average based on the proportion of energy output in MMBtu input contributed by each coal rank burned during the compliance period and its applicable HF emissions limit.
[40 CFR 52.21(j)]

l. Contain sulfuric acid mist (H_2SO_4) in excess of 0.005 lb/MMBtu on a 3-hour average.
[40 CFR 52.21(j)]

m. Contain mercury (Hg) in excess of 15×10^{-6} lb/MW-hr on an annual average while firing PRB coal or 6×10^{-6} lb/MW-hr on an annual average while firing CAPP coal, or a computed weighted average based on the proportion of energy output in gross MW output contributed by each coal rank burned during the compliance period and its applicable Hg emissions limit.
[40 CFR 52.21(j); 40 CFR 60.45Da(a) (subsumed)]

n. Contain mercury from clarifier sludge incineration in both PC-Fired Boilers, S01 and S02, in excess of 3.2 kg (7.1 lb) of mercury per 24-hour period.
[40 CFR 61.52(b)]

o. Contain hydrochloric acid (HCl) in excess of 0.0013 lb/MMBtu on a 3-hour average while firing PRB coal or 0.0083 lb/MMBtu on a 3-hour average while firing CAPP coal or a computed weighted average based on the proportion of energy output in MMBtu input contributed by each coal rank burned during the compliance period and its applicable HCl emissions limit.
[Georgia Air Toxic Guideline - 391-3-1-.02(2)(a)3]

p. Exhibit greater than 20 percent opacity.
[40 CFR 52.21(j); and 391-3-1-.02(2)(d) (subsumed); 40 CFR 60.42Da(b) (subsumed)]

2.16 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from the Auxiliary Boiler, S03 any gases which

a. Contain nitrogen oxides (NOx) in excess of 0.1 lb/MMBtu.
[40 CFR 52.21(j)]

b. Contain carbon monoxide (CO) in excess of 0.04 lb/MMBtu.
[40 CFR 52.21(j); 40 CFR 63.7500 (subsumed)]

c. Contain particulate matter (PM) in excess of 0.01 lb/MMBtu for filterable particulate matter and 0.05 lb/MMBtu for total particulate matter.
[40 CFR 52.21(j); 391-3-1-.02(2)(d) (subsumed); 40 CFR 60.43b(h) (subsumed); 40 CFR 63.7500 (subsumed)]

d. Contain volatile organic compounds (VOC) in excess of 0.003 lb/MMBtu, as methane.
[40 CFR 52.21(j)]

e. Contain sulfuric acid mist (H_2SO_4) in excess of 6×10^{-5} lb/MMBtu.
[40 CFR 52.21(j)]

f. Exhibit greater than 10 percent opacity.
[40 CFR 52.21(j); 40 CFR 63.7500 and 391-3-1-.02(2)(d) (subsumed); 40 CFR 60.43b(f) (subsumed)]

g. Contain hydrochloric acid (HCl) in excess of 0.0009 lb/MMBtu.
[40 CFR 63.7500]

2.17 The Permittee shall limit each PC-Fired boiler, S01 and S02, to a maximum design heat input of 6,139 MMBtu/hr on a one-hour average.
[40 CFR 52.21(j)]

2.18 The Permittee shall limit the hours of operation of Emergency Generator S42 and of Fire Water Pump S43 such that the total hours of operation of each unit does not equal or exceed 500 hours or 150 hours respectively during any twelve consecutive months.
[40 CFR 52.21(j)]

2.19 The Permittee shall limit the hours of operation of auxiliary boiler S03 such that the total hours of operation does not equal or exceed 500 hours during any twelve consecutive months.
[40 CFR 52.21(j)]

2.20 The percent opacity from coal handling particulate sources (Emission Unit IDs S06 – S18) shall not equal or exceed 10 percent. [40 CFR 52.21(j); 40 CFR 60.252(c) (subsumed), 391-2-1-.02(2)(n)2 (subsumed)]

2.21 The Permittee shall take all reasonable precautions to prevent fugitive dust from becoming airborne from the following operations:
[391-3-1-.02(2)(n)1]

a. Coal handling particulate sources (Emission Unit IDs S06 – S18)

b. Ash management particulate sources (Emission Unit IDs S19 – S31)

c. Lime management particulate sources (Emission Unit IDs S35 – S37)

d. Roadway Particulate Sources (Emission Unit IDs S38 and S39)

2.22 The percent opacity from the Ash management particulate sources (Emission Unit IDs S19 – S31) shall not equal or exceed 10 percent.
[40 CFR 52.21(j); 391-3-1-.02(2)(n)2 (subsumed)]

2.23 The percent opacity from the Lime management particulate sources (Emission Unit IDs S35 – S37) shall not equal or exceed 10 percent.
[40 CFR 52.21(j); 391-3-1-.02(2)(n)2 (subsumed)]

2.24 The Permittee shall install and operate, as BACT for cooling towers, S40 and S41, drift eliminators and shall maintain documentation that a 0.001% drift is guaranteed.
[40 CFR 52.21(j)]

3.0 Process and Control Equipment

Not applicable**.**

4.0 Performance Testing

4.1 Performance and compliance tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's **Procedures for Testing and Monitoring Sources of Air Pollutants**. The methods for the determination of compliance with emission limits listed under Section 2.0 which pertain to the emission units listed in Note B are as follows:

a. Method 1 shall be used for the determination of sample point locations,

b. Method 2 shall be used for the determination of stack gas flow rate,

c. Method 3 or 3A shall be used for the determination of stack gas molecular weight,

d. Method 3B shall be used for the determination of the emissions rate correction factor or excess air, Method 3A may be used as an alternative;

e. Method 4 shall be used for the determination of stack gas moisture,

f. Method 5 or Method 17, as applicable, for the determination of filterable Particulate Matter concentration, the sampling time for each run shall be two hours,

g. Method 7 or 7E for the determination of Nitrogen Oxide concentration from the auxiliary boiler, S03, the sampling time for each run shall be one hour,

h. Method 8 shall be used for the determination of sulfur acid mist emissions, the sampling time for each run shall be one hour,

i. Method 9 and the procedures contained in Section 1.3 of the above reference document shall be used for the determination of opacity,

j. Method 10 shall be used for the determination of carbon monoxide concentration, the sampling time for each run shall be one hour,

k. Method 19 shall be used for the determination of particulate matter (PM), carbon monoxide, and nitrogen oxides, and sulfur dioxide emission rates,

l. Method 25A shall be used to determine total Hydrocarbons and to calculate Volatile Organic Compound emissions, the sampling time for each run shall be one hour,

m. Method 26A shall be used for the determination of Fluorine and hydrochloric acid emission rates from the PC-Fired Boilers, S01 and S02, the sampling time for each run shall be one hour,

n. Method 29 shall be used for the determination of lead emission rates, while firing PRB or CAPP coal, from the PC-Fired Boilers, S01 and S02, the sampling time for each run shall be one hour,

o. Method 101A for a stack test or 105 for sludge sampling shall be used for the determination of mercury emissions while firing clarifier sludge unless an alternative method is approved by EPA, from the PC-Fired Boilers, S01 and S02,

p. Method 202 shall be used for the determination of the condensible portion of total particulate matter.

q. Compliance with the Hg limit in Condition 2.15.m. shall be determined according to the procedures in 40 CFR 60.50Da(h)(1) through (h)(3) using the CEMS required by Condition 5.2.
[40 CFR 52.21; 391-3-1-.02(6)(b)1; 40 CFR 60.13]

r. Compliance with the NOx limits in Condition 2.15.a. and 2.15.b. and the SO_2 limits in Condition 2.15.e., 2.15.f., 2.15.g., and 2.15.h. shall be determined using the CEMS required by Condition 5.2.
[40 CFR 52.21; 391-3-1-.02(6)(b)1; 40 CFR 60.13]

s. Compliance with the CO limit in Condition 2.15.c. shall be determined using the CEMS required by Condition 5.2.
[40 CFR 52.21; 391-3-1-.02(6)(b)1; 40 CFR 60.13]

t. Compliance with the filterable PM limit in Condition 2.15.d. shall be determined using the CEMS required by Condition 5.2.
[40 CFR 52.21; 391-3-1-.02(6)(b)1; 40 CFR 60.13]

u. Compliance with the opacity limit in Condition 2.15.p. shall be determined using the COMS required by Condition 5.2.

Minor changes in methodology may be specified or approved by the Director or his/her designee when necessitated by process variables, changes in facility design, or improvement or corrections, which, in his opinion, render those methods or procedures, or portions thereof, more reliable.
[391-3-1-.02(3)(a)]

4.2 Within 60 days after achieving the maximum production rate on each coal type (PRB and CAPP) at which each PC-fired boiler, S01 and S02, will be operated, but not later than 180 days after the initial startup of each boiler for each coal type, the Permittee shall conduct the following performance tests and furnish to the Division a written report of the results of such performance tests:

a. Performance tests on each PC-fired boiler, S01 and S02, for volatile organic compounds at base load and at 50 percent load to verify compliance with Condition No. 2.15.i.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

b. Performance tests on each PC-fired boiler, S01 and S02, for particulate emissions (PM) to verify compliance with Condition No. 2.15.d.
[40 CFR 52.21, 40 CFR 60.13, 40 CFR 60.42a(c) (subsumed), 391-3-1-.02(6)(b)1.(i)]

c. Performance tests on each PC-fired boiler, S01 and S02, for lead to verify compliance with Condition No. 2.15.j.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

d. Performance tests on each PC-fired boiler, S01 and S02, for fluoride emissions (as HF) while firing PRB coal to verify compliance with Condition No. 2.15.k.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

e. Performance tests on each PC-fired boiler, S01 and S02, for fluoride emissions (as HF) while firing CAPP coal to verify compliance with Condition No. 2.15.k.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

f. Performance tests on each PC-fired boiler, S01 and S02, for sulfuric acid mist to verify compliance with Condition No. 2.15.l.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

g. Performance tests on each PC-fired boiler, S01 and S02, for hydrochloric acid while firing PRB coal to verify compliance with Condition No. 2.15.o.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

h. Performance tests on each PC-fired boiler, S01 and S02, for hydrochloric acid while firing CAPP coal to verify compliance with Condition No. 2.15.o.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

i. Performance test or sludge sampling on each PC-Fired Boilers, S01 and S02, shall be completed within 90 days of start up for mercury while firing clarifier sludge to very compliance with Condition No. 2.15.n, unless an alternative is approved by EPA. If the facilities emissions exceed 1.6 kg (3.5 lb) per 24-hour period, demonstrated either by stack sampling according to §61.53 or sludge sampling according to §61.54 or another alternative approved by EPA, shall monitor mercury emissions at intervals of at least once per year by use of Method 105, or an alternative approved by EPA.

4.3 Within 60 days after achieving the maximum production rate at which the auxiliary boiler, S03, will be operated, but not later than 180 days after the initial startup of the boiler, the Permittee shall conduct the following performance tests and furnish to the Division a written report of the results of such performance tests:

a. Performance tests on the auxiliary boiler, S03, for carbon monoxide to verify compliance with Condition No. 2.16.b.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

b. Performance tests on the auxiliary boiler, S03, for volatile organic compounds to verify compliance with Condition No. 2.16.d.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

c. Performance tests on the auxiliary boiler, S03, for particulate emissions (PM) to verify compliance with Condition No. 2.16.c.
[40 CFR 52.21, 391-3-1-.02(6)(b)1.(i)]

d. Performance test on the auxiliary boiler, S03, for nitrogen oxides (NOx) to verify compliance with Condition No. 2.16.a.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

e. Performance tests on the auxiliary boiler, S03, for sulfuric acid mist to verify compliance with Condition No. 2.16.e.
[40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

f. Performance test on the auxiliary boiler, S03, for opacity to verify compliance with Condition 2.16.f.

g. Performance tests on the auxiliary boiler, S03, or fuel sampling to verify compliance with Condition 2.16.g.

5.0 Monitoring Requirements

5.1 Any continuous monitoring system required by the Permit shall be in continuous operation and data recorded as set forth in this Permit during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data shall be recorded during calibration checks and zero and span adjustments. Maintenance or repair shall be conducted in the most expedient manner to minimize the period during which the system is out of service.
[391-3-1-.02(6)(b)1]

5.2 The Permittee shall install, calibrate, maintain, and operate a system to continuously monitor and record the indicated pollutants on the following equipment. Each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.

a. A Continuous Emissions Monitoring System (CEMS) for measuring NOx emissions discharged to the atmosphere from each PC-fired boiler stack, S01 and S02. The one-hour average nitrogen oxides emissions rates shall also be recorded in pound per million Btu heat input [40 CFR 52.21; 391-3-1-.02(6)(b)1; 40 CFR 60.13]

b. A Continuous Emissions Monitoring System (CEMS) for measuring carbon monoxide emissions discharged to the atmosphere from each PC-fired boiler stack, S01 and S02. The one-hour average carbon monoxide emissions rates shall also be recorded in pound per million Btu heat input. [40 CFR 52.21and 391-3-1-.02(6)(b)1]

c. A Continuous Emissions Monitoring System (CEMS) for measuring SO_2 emissions at both the inlet and outlet of the SO_2 control device. The one-hour average sulfur dioxides emissions rates shall be recorded in pound per million Btu heat input [40 CFR 52.21; 391-3-1-.02(6)(b)1; 40 CFR 60.13]

d. A Continuous Emissions Monitoring Systems (CEMS) to measure and record the concentration of Hg in the exhaust gases from each PC-fired boiler stack according to the requirements in 40 CFR 60.49a(p)(1) through (p)(3). Alternatively, for an affected facility that is also subject to the requirements of 40 CFR 75 Subpart I, the Permittee may install, certify, maintain, operate and quality-assure the data from a Hg CEMS according to 40 CFR 75.10 and appendices A and B to 40 CFR 75, in lieu of following the procedures in 40 CFR 60.49a(p)(1) through (p)(3). [40 CFR 52.21; 391-3-1-.02(6)(b)1; 40 CFR 60.13]

e. A Continuous Opacity Monitoring System (COMS) on each PC-fired Boiler stack, S01 and S02.

f. A Continuous Emissions Monitoring System (CEMS) for measuring filterable particulate matter emissions discharged to the atmosphere from each PC-fired boiler stack, S01 and S02. The system shall meet the requirements in 40 CFR 60.48a(p)(2) through (p)(8).

g. A continuous monitoring system for measuring oxygen or carbon dioxide at each location where SO_2, PM, CO or NOx emission monitors are required.

5.3 The Permittee shall install, calibrate, maintain, and operate monitoring devices for the measurement of the indicated parameters on the following equipment. Data shall be recorded at the frequency specified below. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[391-3-1-.02(6)(b)1 and 40 CFR 52.21].

a. The cumulative total hours of operation, during all periods of operation, for each of the following: auxiliary boiler S03, emergency generator S42, and firewater pump S43. Data shall be recorded monthly.

b. The amount of clarifier sludge (in pounds) combusted in each PC-Fired Boiler, S01 and S02. The data will be recorded once per calendar day of process operation.

c. The heat input to each PC-Fired Boiler, S01 and S02. Data shall be recorded hourly using heat input determined in accordance with 40 CFR 75.

6.0 Ambient Monitoring

Not applicable

7.0 Fugitive Emissions

7.1 The Permittee shall take all reasonable precautions with any operation, process, handling, transportation, or storage facilities to prevent fugitive emissions of air contaminants.

8.0 Notification, Reporting, and Record Keeping

Record Keeping Requirements

8.1 All records required to be maintained by this Permit shall be recorded in a permanent form suitable for inspection and submission to the Division. The records shall be retained for at least five (5) years following the date of entry. [391-3-1-.02(6)(b)1(i)]

8.2. The Permittee shall use the hour meters required by Condition No. 5.3a to determine and record the following: [391-3-1-.02(6)(b)1 and 40 CFR 52.21]

a. The net operating hours for each of the following during every calendar month: auxiliary boiler S03, emergency generator S42 and firewater pump S43.

b. The total operating hours for each of the following for the twelve consecutive month period ending with each calendar month: auxiliary boiler S03, emergency generator S42, and firewater pump S43.

These records (including calculations) shall be maintained as part of the monthly record suitable for inspection or submittal. A twelve consecutive month total shall be the total for a month in the reporting period plus the totals for the previous eleven consecutive months.

8.3 The Permittee shall obtain a sample of from each coal shipment for analysis for sulfur content (%S), moisture content, ash content, and Gross Caloric Value (GCV). The sample shall be acquired and analyzed using the procedures of Section 12.5.2.1 in Method 19 of the Division's **Procedures for Testing and Monitoring Sources of Air Pollutants**.
[391-3-1-.02(6)(b)1(i)]

8.4 The Permittee shall retain records of all fuel burned in the PC-Fired boilers, S01 and S02 at the frequency specified below. The records shall be available for inspection or submittal to the Division, upon request, and contain the following:
[391-3-1-.02(6)(b)1(i)]

a. Monthly quantity (tons) of each coal type burned.

b. Monthly quantity (gallons) of ultra low sulfur diesel fuel oil burned.

c. Quantity (pounds) of clarifier sludge burned daily (24-hour).

d. Monthly quantity (tons) of pet coke burned.

8.5 The Permittee shall maintain records of representative samples of the coal burned in the PC-Fired Boilers, S01 and S02. The records shall be available for inspection or submittal to the Division, upon request, and contain the following:
[391-3-1-.02(6)(b)1(i)]

a. Percent ash content of coal.

8.6 For each shipment of ULSD fuel oil received, as defined in Condition 2.13, the Permittee shall obtain from the supplier of the fuel oil, a statement certifying that the oil complies with the specifications of ultra low sulfur diesel fuel oil contained in ASTM D 975. As an alternative to the procedure described above, the Permittee may, for each shipment of ultra low sulfur diesel fuel oil received, obtain a sample for analysis of the sulfur content. The procedures of ASTM D 4057 shall be used to acquire the sample. Sulfur content shall be determined using the procedures of Test Method ASTM D 129 or by some other test method approved by the US EPA and acceptable to the Division.
[40 CFR 63.7506 and 391-3-1-.02(6)(b)1(i)]

8.7 The Permittee shall maintain a record of all actions taken in accordance with Condition 2.21 to suppress fugitive dust from the Coal handling particulate sources (Emission Unit IDs S06 – S18), the Ash management particulate sources (Emission Unit IDs S19 – S31), the Lime management particulate sources (Emission Unit IDs S35 – S37), and the Roadway Particulate Sources (Emission Unit IDs S38 and S39). Such records shall include the date and time of occurrence and a description of the actions taken.
[391-3-1-.02(6)(b)1(i)]

8.8 The Permittee shall determine compliance with the NOx emissions limitations in Condition No. 2.15.a and b using emissions data acquired by the NOx CEMS. The 30-day rolling average and 12-month rolling average shall be determined as follows: [391-3-1-.02(6)(b)1(i)]

a. The 30-day average shall be the average of all valid hours of NOx emissions data for any 30 successive operating days.

b. After the first 30-day average, a new 30-day rolling average shall be calculated after each operating day.

c. A twelve consecutive month total shall be the total for a month in the reporting period plus the totals for the previous 11 consecutive months. These records (including calculations) shall be maintained as part of the monthly record suitable for inspection or submittal.

d. For the purpose of this Permit, an operating day is a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time. It is not necessary for the fuel to be combusted continuously for the entire 24-hour period.

8.9 The Permittee shall determine compliance with the SO_2 emissions limitations in Condition No. 2.15.e, f, and g using emissions data acquired by the SO_2 CEMS. The 30-day rolling average shall be determined as follows: [391-3-1-.02(6)(b)1(i)]

a. The 30-day average shall be the average of all valid hours of SO_2 emissions data for any 30 successive operating days.

b. After the first 30-day average, a new 30-day rolling average shall be calculated after each operating day.

c. For the purpose of this Permit, an operating day is a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time. It is not necessary for the fuel to be combusted continuously for the entire 24-hour period.

8.10 The Permittee shall determine compliance with the CO emissions limitations in Condition No. 2.15.c using emissions data acquired by the CO CEMS. The 30-day rolling average shall be determined as follows: [391-3-1-.02(6)(b)1(i)]

a. The 30-day average shall be the average of all valid hours of CO emissions data for any 30 successive operating days.

b. After the first 30-day average, a new 30-day rolling average shall be calculated after each operating day.

c. For the purpose of this Permit, an operating day is a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time. It is not necessary for the fuel to be combusted continuously for the entire 24-hour period

8.11 The Permittee shall determine compliance with the PM filterable emissions limitations in Condition No. 2.15.d using emissions data acquired by the PM CEMS. The 3-hour rolling average shall be determined as follows: [391-3-1-.02(6)(b)1(i)]

a. The 3-hour average shall be the average of all valid hours of PM filterable emissions data for any 3 successive operating hours.

b. After the first 3-hour average, a new 3-hour average shall be calculated after each 3-hour block.

8.12 The Permittee shall determine compliance with the mercury emissions limitations in Condition No. 2.15.m using emissions data acquired by the mercury CEMS. The annual average shall be determined as follows: [40 CFR 52.21; 391-3-1-.02(6)(b)1.(i)]

a. The Permittee shall determine and record the emission rate (lb/MW-hr) of mercury from each PC-Fired Boiler while firing coal. The emission rate from each stack, as specified in Condition No. 2.15, shall be recorded continuously.

b. Using the above records the Permitte shall determine the monthly emission rate, in lb/MW-hr per month, of mercury from each PC-Fired Boiler. These records (including calculations) shall be maintained as part of the monthly record suitable for inspection or submittal.

c. A twelve consecutive month total shall be the total for a month in the reporting period plus the totals for the previous 11 consecutive months. These records (including calculations) shall be maintained as part of the monthly record suitable for inspection or submittal.

8.13 The Permittee shall determine and record the emission rate (lb per 24-hour period) of mercury from each PC-Fired Boiler, S01 and S02, while firing clarifier sludge, using the stack testing or sampling required by Condition No. 4.2.k and the records required by Condition No. 8.4.c. [40 CFR 61.55]

8.14 The Permittee shall use the records required by Condition No. 8.13 to determine the 24-hour total of mercury emissions (in lbs) from each PC-Fired Boiler, for each month while firing clarifier sludge. For the purpose of this Permit, an operating day is a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time. It is not necessary for the fuel to be combusted continuously for the entire 24-hour period.
[40 CFR 61.55]

8.15 The Permittee shall maintain the following records as they relate to the startup and shutdown of each PC-Fired Boiler, S01 and S02:
[391-3-1-.02(6)(b)1(i) and 40 CFR 52.21]

a. The type of startup initiated, per day; the hours attributed to the startup, and the hours attributed to shutdown. If the PC-Fired Boiler was not in operation on any given day, the records shall so note.

b. Identify startup of the pollution control systems – SCR, Dry Scrubber, and Fabric Filter Baghouse

8.16 The Permittee shall verify and document that each shipment of ultra low sulfur diesel fuel oil (ULSD) received for combustion in the auxiliary boiler, emergency diesel generator, and the firewater pump, S03, S42, and S43, complies with the requirements of Condition 2.12 of the Permit by either of the following means:
[40 CFR 63.7506 and 391-3-1-.02(6)(b)1(i)]

a. Fuel oil receipts obtained from the fuel supplier certifying that the oil is diesel fuel oil and contains less than or equal to 0.0015 percent sulfur, by weight.

b. Analysis of the fuel oil conducted by methods of sampling and analysis which have been specified or approved by the Division which demonstrates that the diesel fuel oil contains less than or equal to 0.0015 percent sulfur, by weight.

8.17 The Permittee shall maintain files of all measurements, including continuous monitoring systems, monitoring devices, and performance testing measurements; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices. These files shall be kept in a permanent form suitable for inspection and shall be maintained for a period of at least five (5) years following the date of such measurements, reports, maintenance and records.
[391-3-1-.03(2)(c)]

8.18 The Permittee shall develop and implement a Dust Suppression Plan sufficient to assure that the provisions of Condition Nos. 2.20, 2.21, 2.22, and 2.23 are met. The plan shall be subject to review and approval by the Division and shall include records sufficient to show that the plan is followed. In particular, any deviations from the plan, or failure to follow plan procedures, shall be noted.
[391-3-1-.02(6)(b)1]

8.19 The Permittee shall determine and record the heat rate from each PC-Fired Boiler, S01 and S02 to ensure that each boiler operates under the maximum design heat input rate as stated in Condition No. 2.17.
[391-3-1-.02(6)(b)1(i) and 40 CFR 52.21]

8.20 The Permittee shall maintain documentation that the drift eliminators from each cooling tower, S40 and S41 operate in a manner that is consistent with Condition No. 2.24.
[391-3-1-.02(6)(b)1(i) and 40 CFR 52.21]

Reporting Requirements

8.21 The Permittee shall furnish the Division written notification as follows:
[40 CFR 52.21; 40 CFR 60.7; 40 CFR 61.09]

a. A notification of the date of construction of each PC-Fired Boiler, S01 and S02, auxiliary boiler, S03, and the Coal Handling Particulate Sources, S06 – S18, is commenced postmarked no later than 30 days after such date.

b. A notification of the actual date of initial startup of each PC-Fired Boiler, S01 and S02, auxiliary boiler, S03, and the Coal Handling Particulate Sources, S06 – S18, postmarked within 15 days after such date. For purposes of this permit, "startup" shall mean the setting in operation of an affected facility for any purpose.

c. Certification that a final inspection has shown that construction of each PC-Fired Boiler, S01 and S02, has been completed in accordance with the application, plans, specifications and supporting documents submitted in support of this permit. The certification shall be included with the notification in paragraph (b).

d. A notification of the testing or sludge sampling completion as required by 40 CFR 61.53 and 61.54 within 90 days of startup while firing clarifier sludge in each PC-Fired Boiler, S01 and S02.

8.22 In addition to any other reporting requirements of this Permit, the Permittee shall report to the Division in writing, within seven (7) days, any deviations from applicable requirements associated with any malfunction or breakdown of process, fuel burning, or emission control equipment for a period of four hours or more which results in excessive emissions.

The Permittee shall submit a written report which shall contain the probable cause of the deviation(s), duration of the deviation(s), and any corrective actions or preventive measures taken.
[391-3-1-.02(6)(b)1.(iv)]

8.23 Excess Emissions

a. Excess emissions resulting from startup, shutdown, malfunction of any source which occur though ordinary diligence is employed shall be allowed provided that:
[391-3-1-.02(2)(a)7(i)]

i. The best operational practices to minimize emissions are adhered to;

ii. All associated air pollution control equipment is operated in a manner consistent with good air pollution control practice for minimizing emissions; and

iii. The duration of excess emissions is minimized.

b. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction are prohibited and are violations of this Permit.
[391-3-1-.02(2)(a)7(ii)]

c. The provisions of this condition and Georgia Rule 391-3-1-.02(2)(a)7 shall apply only to those sources which are not subject to any requirement under Georgia Rule 391-3-1-.02(8) – New Source Performance Standards or any requirement of 40 CFR, Part 60, as amended concerning New Source Performance Standards.
[391-3-1-.02(2)(a)7(iii)]

8.24 The Permittee shall submit a written report containing excess emissions, exceedances, and/or excursions as described in this permit and any monitor malfunctions for each quarterly period ending March 31, June 30, September 30, and December 31 of each year. All reports shall be postmarked by the 30th day following the end of each reporting period, April 30, July 30, October 30, and January 30, respectively. Reporting required by this condition shall begin at the end of the quarter in which initial startup is completed. In the even that there have not been any excess emissions, exceedances, excursions or malfunctions during a reporting period, the report should so state. Otherwise, the contents of each report shall be as specified by the Division's Procedures for Testing and Monitoring Sources of Air Pollutants and shall contain the following:
[391-3-1-.02(6)(b)1]

a. A summary report of excess emissions, exceedances and excursions, and monitor downtime, in accordance with Section 1.5(c) and (d) of the above referenced document, including any failure to follow required work practice procedures.

b. Total operating time during each reporting period.

c. The magnitude of all excess emissions, exceedances and excursions computed in accordance with the applicable definitions as determined by the Director, and any conversion factors used, and the date and time of the commencement and completion of each time period of occurrence.

d. Specific identification of each period of such excess emissions, exceedances, and excursions that occur during startups, shutdowns, or malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventive measures adopted.

e. The date and time identifying each period during which any required monitoring system or device was inoperative (including periods of malfunction) except for zero and span checks, and the nature of the repairs, adjustments, or replacement. When the monitoring system or device has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

f. Certification that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

8.25 For the purpose of reporting excess emissions, exceedances or excursions in the report required in Condition No. 8.24, the following excess emissions, exceedances, and excursions shall be reported:
[40 CFR 52.21 and 391-3-1-.02(6)(b)1]

a. Excess emissions: (means for the purpose of this Condition and Condition No. 8.24, any condition that is detected by monitoring or record keeping which is specifically defined, or stated to be, excess emissions by an applicable requirement)

None required to be reported in accordance with Condition No. 8.24.

b. Exceedances: (means for the purpose of this Condition and Condition No. 8.24, any condition that is detected by monitoring or record keeping that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) do not meet the applicable emission limitation or standard consistent with the averaging period specified for averaging the results of the monitoring)

i. Any 30-day rolling average NOx emission rate which exceeds 0.07 lb/MMBtu for each PC-Fired Boiler, S01 and S02,

ii. Any 12-month rolling average NOx emission rate which exceeds 0.05 lb/MMBtu for each PC-Fired Boiler, S01 and S02, this condition becomes effective 6 months after initial start-up of each PC-Fired boiler, S01 and S02, absent approval by the Division for an extension of this date.

iii. Any 1-hour average CO emission rate which exceeds 0.30 lb/MMBtu for each PC-Fired Boiler, S01 and S02,

iv. And 30-day rolling average CO emission rate which exceeds 0.15 lb/MMBtu for each PC-Fired Boiler, S01 and S02,

v. Any 3-hour block average for filterable PM emission rate which exceeds 0.012 lb/MMBtu for each PC-Fired Boiler, S01 and S02,

vi. Any 24-hour average sulfur dioxide emission rate which exceeds 0.12 lb/MMBtu for each PC-Fired Boiler, S01 and S02,

vii. Any 30-day rolling average sulfur dioxide emission rate exceeds 0.065 lb/MMBtu when the uncontrolled sulfur dioxide emission rate is less than or equal to 1 lb/MMBtu on a 30-day rolling average for each PC-Fired Boiler, S01 and S02,

viii. Any 30-day rolling average sulfur dioxide emission rate exceeds 0.08 lb/MMBtu when the uncontrolled sulfur dioxide emission rate is greater than 1 lb/MMBtu but less than 1.25 lb/MMBtu on a 30-day rolling average for each PC-Fired Boiler, S01 and S02,

ix. Any 30-day rolling average sulfur dioxide emission rate exceeds 0.105 lb/MMBtu when the uncontrolled sulfur dioxide emission rate is greater than 1.25 lb/MMBtu but less than 1.6 lb/MMBtu on a 30-day rolling average for each PC-Fired Boiler, S01 and S02,

x. Any annual average mercury emission rate that exceeds 15 x 10^{-6} lb/MW-hr while firing PRB coal for each PC-Fired Boiler, S01 and S02,

xi. Any annual average mercury emission rate that exceeds 6 x 10^{-6} lb/MW-hr while firing CAPP coal for each PC-Fired Boiler, S01 and S02,

xii. Any 24-hour average mercury emissions rate while firing clarifier sludge that exceeds 7.1 lb.

xiii. Any six-minute period during which the average opacity, as measured by a continuous opacity monitoring system for either PC-Fired boiler, S01 and S02, exceeds 20 percent.

xiv. Any time fuel fired in any PC-Fired Boiler, S01 and S02, has a sulfur content which exceeds 3.0 percent sulfur, by weight.

xv. Any time ultra low sulfur fuel oil combusted for startup in PC-Fired boilers, S01 and S02, in auxiliary boiler, S03, in emergency generator S42 and firewater pump S43 exceeds 0.0015 percent sulfur by weight.

xvi. Any twelve consecutive month period during which hours of operation of the auxiliary boiler exceeds 500 hours.

xvii. Any twelve consecutive month period during which hours of operation of emergency generator S42 or firewater pump S43 exceed 500 and 150 hours respectively.

xviii. Any hour that either PC-Fired boiler, S01 and S02, has a heat input rate that exceeds 6,139 MMBtu/hr.

xix. Any calendar day that clarifier sludge combustion in either PC-Fired boiler, S01 and S02, exceeds 1.0 percent of the total heat input rate to the boiler, or 61.4 MMBtu/hr.

c. Excursions: (means for the purpose of this Condition and Condition No. 8.24, any departure from an indicator range or value established for monitoring consistent with any averaging period specified for averaging the results of the monitoring).

i. None required to be reported in accordance with Condition 8.24.

8.26 The Permittee shall submit a written report containing the following information for each quarterly period ending March 31, June 30, September 30, and December 31 of each year. All reports shall be postmarked by the 30th day following the end of each reporting period, April 30, July 30, October 30, and January 30, respectively. Reporting required by this condition shall begin at the end of the quarter in which initial startup is completed. [40 CFR 52.21, 40 CFR 63.7506, and 391-3-1-.02(6)(b)1]

a. The twelve consecutive month total hours of operation of auxiliary boiler, S03, emergency generator S42, and firewater pump S43, each, for each month in the quarterly reporting period. A twelve consecutive month total shall be the total for a month in the reporting period plus the totals for the previous eleven consecutive months.

b. The annual mercury emission rate in lb/MW-hr from each PC-Fired Boiler, S01 and S02, along with the corresponding weighted average limit determined in accordance with Condition 2.15.m.

c. The 30-day average NOx emission lb/MMBtu from PC-fired boilers, S01 and S02, for each 30-day average period that ends during the reporting period.

d. The 12-month rolling average NOx emission lb/MMBtu from PC-fired boilers, S01 and S02, for each 11-month average period that ends during the reporting period.

e. The 30-day average SO_2 emission lb/MMBtu from PC-fired boilers, S01 and S02, for each 30-day average period that ends during the reporting period.

f. The coal sampling to determine sulfur content, moisture content, and Gross Caloric Value as required by condition 8.3. Monthly records on the tons of coal burned in Condition 8.4 and the percent ash content as required in Condition 8.5.

g. ULSD fuel oil certifications for ultra low sulfur diesel fuel oil burned for startup in each PC-Fired Boiler, S01 and S02, in auxiliary boiler S03, Diesel Emergency Generator S42, and Emergency Firewater Pump S43, and a statement signed by a responsible official of the affected facility that the records of fuel supplier certifications submitted represent all of the ULSD fuel oil was not burned during the quarter, the report should state that no ULSD fuel oil was burned during the quarter.

h. The 24-hour total of mercury emissions (in lbs) from each PC-Fired Boiler, S01 and S02, for each 24-hour period while firing clarifier sludge.

i. The maximum hourly heat input for each PC-Fired Boiler, S01 and S02 during the reporting period.

9.0 Modifications

9.1 Prior to any source commencing a modification as defined in Georgia Rule 391-3-1-.01(pp), which may result in air pollution and not exempted by Georgia Rule 391-3-1-.03(6), the Permittee shall submit a Permit application to the Division. The application shall be submitted sufficiently in advance of any critical data involved to allow adequate time for review, discussion, or revision of plans, if necessary. Such application shall include, but not be limited to, information describing the precise nature of the change, modifications to any emission control system, production capacity of the plant before and after the change, and the anticipated completion date of the change. The application shall be in the form of a Georgia Air Quality Permit application to construct or modify (otherwise known as a SIP application) and shall be submitted on forms supplied by the Division, unless otherwise notified by the Division.

10.0 Special Conditions

10.1 At any time that the Division determines that additional control of emissions from the facility may reasonably be needed to provide for the continued protection of public health, safety and welfare, the Division reserves the right to amend the provisions of this Permit pursuant to the Division's authority as established in the Georgia Air Quality Act and the rules adopted pursuant to that Act.

10.2 The Permittee shall submit an Initial Title V permit application within one year of initial startup of the plant.

10.3 The Permittee shall calculate and pay an annual Permit fee to the Division. The amount of the fee shall be determined each year in accordance with the "Procedures for Calculating Air Permit Fees."

Exhibit 8

CLASS I AIR QUALITY OPERATING PERMIT TO CONSTRUCT

Issued to: NEWMONT NEVADA ENERGY INVESTMENT, LLC, as Permittee

Section V. Specific Operating Conditions

A. Emission Unit #S2.001 – Pulverized Coal Fired Boiler. *UTM: North 4510.669 km, East 539.693 km (Zone 11)*

System 01A – Pulverized Coal-Fired Boiler, 200 MW nominal output.

S2.001 ***Sub-Critical Steam Boiler****, Manufacturer TBD, Model # TBD, Serial # TBD, Unit Manufactured TBD. 2,030 million Btu/hr, Maximum Heat Input, Nominal 200 MW Output.*

1. NAC 445B.3405
   Air Pollution Equipment
   a. Emissions from **S2.001** shall be ducted to the following emissions control system with 100% capture and a maximum volume flow rate of 476,000 dry standard cubic feet per minute (DSCFM):
      (1) Pulse Jet Fabric Filter Dust Collector for the control of particulate matter.
      (2) Lime Spray Dryer dry scrubbing system for the control of sulfur dioxide, hydrogen fluoride, hydrogen chloride and sulfuric acid mist.
      (3) Selective Catalyst Reduction (SCR) system, Low NO_x coal burners and over-fired air for the control of oxides of nitrogen (NO_x). The SCR shall utilize ammonia injection into the SCR at a volume specified by the manufacturer.
      (4) Activated Carbon injection system for the control of mercury emissions.

   b. Stack Parameters
      Height: 350 ft
      Diameter: 16 ft
      Exhaust Temperature: 160 ^oF
      Velocity: 66.0 ft/sec
      Volume Flow: 476,000 DSCFM

2. NAC 445B.3405
   Emission Limits
   a. On and after the date of startup of **S2.001**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of **S2.001**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of PM (particulate matter) and PM_{10} (particulate matter less than 10 microns in diameter), filterable and condensable, to the atmosphere each will not exceed **77.1** pounds per hour.

      (2) NAC 445B.2203(1)(b) – The discharge of PM_{10} to the atmosphere will not exceed **0.176** pound per million Btu.

      (3) SIP 445.731(1)(b) *Federally Enforceable SIP* – The discharge of PM to the atmosphere will not exceed **0.176** pound per million Btu.

      (4) NAC 445B.305 *BACT Emission Limit* – The discharge of PM and PM_{10}, each, to the atmosphere will not exceed **0.012** pound per million Btu, filterable, based on a 24-hour rolling average period.

      (5) 40 CFR Part 60.42a(a) *Federally Enforceable New Source Performance Standard Requirement* - On and after the date on which the performance test required to be conducted by Sec. 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 13 nanograms per joule (0.03 lb per million Btu) heat input derived from the combustion of solid fuel; 1 percent of the potential combustion concentration (99 percent reduction) when combusting solid fuel; and 30 percent of the potential combustion concentration (70 percent reduction) when combusting liquid fuel.

      (6) NAC 445B.22047(3) – The discharge of sulfur to the atmosphere will not exceed **1,218.0** pounds per hour.

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

2. NAC 445B.3405

a. Emission Limits (continued)

(7) Article 8.2.1.2 *Federally Enforceable SIP* - The discharge of sulfur to the atmosphere will not exceed **1,218.0** pounds per hour.

(8) NAC 445B.305 *BACT Emission Limit* – The discharge of SO_2 to the atmosphere will not exceed:

(i) While combusting coal with a Sulfur content equal to or greater than 0.45 percent (30-day rolling period), based on daily ASTM sampling:

(a) **0.09** pound per million Btu, based on a 24-hour rolling average period.

(b) 95% minimum SO_2 removal efficiency will be maintained across the system, based on a 30-day rolling period.

(ii) While combusting coal with a Sulfur content less than 0.45 percent (30-day rolling period), based on daily ASTM sampling:

(a) 0.065 pound per million Btu, based on a 24-hour rolling average period.

(b) 91% minimum SO_2 removal efficiency will be maintained across the system, based on a 30-day rolling period.

(9) NAC 445B.305 – The discharge of SO_2 to the atmosphere will not exceed **192.9** pounds per hour, based on a 3-hour rolling average period.

(10) 40 CFR Part 60.43a(a) *Federally Enforceable New Source Performance Standard Requirement* - On and after the date on which the initial performance test required to be conducted under Sec. 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility which combusts solid fuel, any gases which contain sulfur dioxide in excess of 520 nanograms per joule (1.20 lb per million Btu) heat input and 10 percent of the potential combustion concentration (90 percent reduction), or 30 percent of the potential combustion concentration (70 percent reduction), when emissions are less that 260 nanograms per joule (0.60 lb per million Btu) heat input. Compliance with the emission limitation and percent reduction requirements under this section are both determined on a 30-day rolling average basis (40 CFR Part 60.43a(g)).

(11) NAC 445B.305 *BACT Emission Limit* – The discharge of NO_x (oxides of nitrogen) to the atmosphere will not exceed **0.067** pound per million Btu, based on a 24-hour rolling period.

(12) NAC 445B.305 – The discharge of NO_x to the atmosphere will not exceed **595.7** tons per 12-month rolling period.

(13) 40 CFR Part 60.44a(d)(1) *Federally Enforceable New Source Performance Standard Requirement* - On and after the date on which the initial performance test required to be conducted by Sec. 60.8 is completed, no new source owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility for which construction commenced after July 9, 1997 any gases which contain nitrogen oxides (expressed as NO_2) in excess of 200 nanograms per joule (1.6 pounds per megawatt-hour) gross energy output, based on a 30-day rolling average.

(14) NAC 445B.305 *BACT Emission Limit* – The discharge of CO (carbon monoxide) to the atmosphere will not exceed **0.15** pound per million Btu, based on a 24-hour rolling period.

(15) NAC 445B.305 – The discharge of CO to the atmosphere will not exceed **304.5** pounds per hour.

(16) NAC 445B.305 – The discharge of VOC (volatile organic compounds) to the atmosphere will not exceed **8.1** pounds per hour during normal boiler operation.

Issued to: NEWMONT NEVADA ENERGY INVESTMENT, LLC, as Permittee

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

2. NAC 445B.3405
   a. Emission Limits (continued)
   (17) NAC 445B.305 – The discharge of lead to the atmosphere will not exceed **0.007** pound per hour.

   (18) NAC 445B.305 – The discharge of mercury to the atmosphere will not exceed **0.02** pound per gigawatt hour, based on a 12-month rolling period.

   (19) NAC 445B.305 *BACT Emission Limit* – The discharge of Hydrogen Fluoride to the atmosphere will not exceed **1.17** pounds per hour.

   (20) NAC 445B.305 – The discharge of Hydrogen Chloride to the atmosphere will not exceed **1.27** pounds per hour.

   (21) NAC 445B.305 *BACT Emission Limit* – The discharge of Sulfuric Acid Mist to the atmosphere will not exceed **2.06** pounds per hour.

   (22) SIP 445.721 *Federally Enforceable SIP* - The opacity from **S2.001** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour.

   (23) NAC 445B.22017 – The opacity from **S2.001** will not equal or exceed 20%. The opacity must be determined as set forth in 445B.22017.1(a) or (b). **S2.001** is allowed one 6-minute period per hour of not more than 27 percent opacity as set forth in 40 CFR part 60.42a(2).

   (24) NAC 445B.2202 – The opacity provisions in NAC 445B.22017 do not apply to emissions from a steam generating unit fired by fossil fuel or wood for boiler lancing or soot blowing, not to exceed 180 minutes in any 24 consecutive hours.

   (25) 40 CFR Part 60.42a(b) *Federally Enforceable New Source Performance Standard Requirement* - On and after the date the particulate matter performance test required to be conducted by Sec. 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

3. NAC 445B.3405
   Operating Parameters
   a. **S2.001** will combust sub-bituminous coal only when operating at or above 800 million Btu per hour.
   b. **S2.001** may combust #2 Distillate Fuel Oil for a maximum of 3 hours for each start-up, not to exceed 800 million Btu per hour.
   c. **S2.001** may operate a total of 8,760 hours per calendar year.
   d. The maximum operating heat input rate for **S2.001** while combusting sub-bituminous coal will not exceed **2,030** million Btu per any one-hour period.
   e. **S2.001** may not combust #2 Distillate Fuel Oil with a sulfur content in excess of 0.05% Sulfur, by weight.

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

4. NAC 445B.3405

Compliance, Monitoring, Recordkeeping and Reporting

a. **Compliance/Performance Testing**

Within 180 days of initial startup or within 60 days of achieving the maximum rate of production, whichever is sooner, on **S2.001** as required in Section II.A.3, and after 7,000 hours of operation of additional operation following the initial testing, but not greater than 8,760 hours of additional operation after initial testing of **S2.001**, ***the Permittee*** shall:

(1) Conduct and record a Method 5 performance test for PM on the exhaust stack of **S2.001** consisting of three valid runs. The Method 5 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 5, and include the back-half catch. Compliance with the particulate matter standards contained in A.2.a.(1) through (4) shall be determined by using the dry basis F factor (O_2) procedures in Method 19 to compute the emissions rate. Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 120 minutes and 1.70 dscm (60 dscf). The probe and filter holder heating system in the sampling train may be set to provide an average gas temperature of 160+/- 14^0C (320+/- 25^0F). For each particulate run, the emission rate correction factor, integrated or grab sampling and analysis procedures of Method 3B shall be used to determine the O_2 concentration. The O_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate run. If the particulate run has more than 12 traverse points, the O_2 traverse points may be reduced to 12 provided that Method 1 is used to locate the 12 O_2 traverse points (40 CFR Part 60.48a(b)). The daily coal sampling required in A.4.b.(4) of this section shall be performed during this test.

(2) Conduct and record a Method 201A and 202 performance test for PM_{10} on the exhaust stack of **S2.001** consisting of three valid runs. The Method 201A and 202 emissions tests must be conducted in accordance with 40 CFR Part 51, Appendix M, Method 201A and 202. The Method 201A and 202 emissions tests may be replaced by the Method 5 performance test required in A.4.a.(1) above. All particulate captured in the Method 5 test will be considered PM_{10} for compliance demonstration purposes.

(3) Conduct and record a Method 6 or 6C performance test for SO_2 on the exhaust stack of **S2.001** consisting of three valid runs. The Method 6 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 6 or 6C.

(4) Conduct and record a Method 7 or 7E performance test for NO_x on the exhaust stack of **S2.001** consisting of three valid runs. The Method 7 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 7 or 7E.

(5) Conduct and record a Method 10 performance test for CO on the exhaust stack of **S2.001** consisting of three valid runs. The Method 10 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 10.

(6) Conduct and record a Method 25 or 25A performance test for VOC on the exhaust stack of **S2.001** consisting of three valid runs. The Method 25 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 25 or 25A.

(7) Conduct and record a Method 29 performance test for Pb and Hg on the exhaust stack of **S2.001** consisting of three valid runs. The Method 29 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 29.

(8) Conduct and record Method 26 performance test for HF and HCl on the exhaust stack of **S2.001** consisting of three valid runs. The Method 26 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 26.

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

4. NAC 445B.3405

Compliance, Monitoring, Recordkeeping and Reporting (continued)

a. **Compliance/Performance Testing** (continued)

(9) Conduct and record Method 8 performance test for H_2SO_4 on the exhaust stack of **S2.001** consisting of three valid runs. The Method 8 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 8.

(10) During one of the three test runs required in A.4.a.(1) of this section, conduct and record a Method 9 visual opacity observation of the discharge from the exhaust stack of **S2.001.** The Method 9 opacity test must be conducted in accordance with the visible emissions evaluation procedures contained in 40 CFR Part 60, Appendix A, Method 9. A certified visible emissions reader must conduct the visible emissions evaluations for a period of at least 6 minutes. The opacity readings must be averaged such that compliance with both a 6-minute average and 2, 3-minute averages are determined (40 CFR Part 60.48a(b)(3)).

(11) The performance tests will be conducted at the maximum operating heat input rate limit established in A.3.c of this section for each pollutant required to be tested, unless otherwise approved pursuant to NAC 445B.252.2 & 3. ***The Permittee*** shall make available to the director such records as may be necessary to determine the conditions of the test of performance. Operations during periods of startup, shutdown and malfunction must not constitute representative conditions of a test of performance unless otherwise specified in the applicable standard (NAC 445B.252.3).

(12) ***The Permittee*** shall give notice to the director 30 days before the test of performance to allow the director to have an observer present. A written testing procedure for the test of performance must be submitted to the director at least 30 days before the test of performance to allow the director to review the proposed testing procedures (NAC 445B.252.4). The alternative to the reference methods and procedures provided in 40 CFR Part 60.48a(e) may be utilized to the extent that they are applicable to **S2.001**, and must be identified in the testing procedures as alternative methods.

(13) During each performance test required in A.4.a.(1) through (5) of this section, record the quantity (in tons) of coal combusted during each test run, the heat content value of the coal combusted during each test run (in Btu/ton) and include these data in the test results submitted. The emissions results of the Method 6, Method 7, and Method 10 performance tests for SO_2, NO_x and CO must be converted to emissions of sulfur (both lb/hr and lb/MMBtu), emissions of nitrogen oxides (lb/MMBtu), and emissions of CO (both lb/hr and lb/MMBtu). The emissions results of the Method 5 or Method 201A and 202 performance test for PM_{10} must be reported in lb/MMBtu.

(14) As a result of the most recent performance test performed in A.4.a.(1) and (2) of this section, derive emission factors for each of the following:

(i). Pounds of PM per ton of coal (lbs-PM/tons-coal), filterable and condensable.
(ii) Pounds of PM per ton of coal (lbs-PM/tons-coal), filterable only.
(iii). Pounds of PM_{10} per ton of coal (lbs-PM_{10}/tons-coal), filterable and condensable.
(iv) Pounds of PM_{10} per ton of coal (lbs-PM_{10}/tons-coal), filterable only.

These emissions factors will be based on the average of the 3 test runs.

(15) Within 60 days after completing the performance tests and opacity observations contained in A.4.a. of this section, ***the Permittee*** shall furnish the director a written report of the results of the performance tests, the opacity observations and the resultant emissions factors. All information and analytical results of testing and sampling must be certified as to the truth and accuracy and as to their compliance with NAC 445B.001 to 445B.3497 (NAC 445B.252.8).

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

4. NAC 445B.3405

Compliance, Monitoring, Recordkeeping and Reporting

b. **Monitoring**

The Permittee, upon startup of **S2.001**, will:

(1) Install, calibrate, operate and maintain a coal mass measurement device to continuously measure the amount of sub-bituminous coal (in tons) combusted in **S2.001**. The coal mass measurement device will be installed at an appropriate location in the fuel delivery system to accurately and continuously measure the fuel combusted in **S2.001**.

(2) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the quantity (in tons) of sub-bituminous coal as measured by the coal mass measurement device required in A.4.b.(1) of this section. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications.

(3) Perform coal sampling of the coal prior to it entering the boiler. Sampling shall be conducted for moisture, ash, sulfur content and gross calorific value. Coal moisture, ash, sulfur content and gross calorific value will be recorded on 24-hour and 30-day rolling periods. A coal analysis shall be performed daily and the results of these analyses shall be retained for at least two years following the date of the measurement. All sample collection, sample preparation, and analyses performed or caused to be performed shall be conducted according to the most current ASTM methods.

(4) Perform coal sampling of the sub-bituminous coal daily according to Section 12.5.3.2.2 in Method 19 in appendix A to Part 60 and use ASTM Method D2234-89, "Standard Test Methods for Collection of a Gross Sample of Coal." Determine the gross calorific value of the sub-bituminous coal combusted, collected in the daily sampling, using ASTM D2013-86, "Standard Method of Preparing Coal Samples for Analysis", ASTM D2015-91, "Standard Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter", ASTM 1989-92, "Standard test Method for Gross Calorific Value of Coal and Coke by Microprocessor Controlled Isoperibol Calorimeters", or ASTM 3286-91a, "Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter." The appropriate ASTM methods will be used to determine the coal moisture, ash and sulfur contents.

(5) Install, calibrate, operate and maintain a SO_2 continuous emissions monitor system (CEMS) (consisting of a SO_2 pollutant concentration monitors and flow monitoring devices) to continuously measure the concentrations and percent reduction of SO_2 (in ppm), percent reduction, volumetric gas flow (in SCFH), and SO_2 mass emissions (in lb/hr and lb/MMBtu) from **S2.001**. The CEMS will be installed at appropriate locations in the exhaust stack of **S2.001** to accurately and continuously measure the SO_2 concentrations in **S2.001** in accordance with the requirements prescribed in NAC 445B.256 to NAC 445B.267, 40 CFR Part 60.47a(b), 40 CFR Part 60, Appendix B, Performance Specification 2, 40 CFR Part 75, Part 75.11, 40 CFR Part 75 Subpart B; and the requirements for the annual Relative Accuracy Test Audit, as prescribed in 40 CFR Part 60, Appendix F.

(i) For demonstrating compliance with A.2.a.10 of this Section, SO_2 emissions shall be monitored at both the inlet and outlet of the sulfur dioxide control device in accordance with 40 CFR 60.47a(b)(1). The procedures established in 40 CFR Part 60.47a(i) shall be used to conduct monitoring system performance evaluations. (NSPS Subpart Da Requirement)

(ii) For demonstrating compliance with the removal efficiencies in A.2.a.8 of this Section: (BACT Requirement)

(a) SO_2 emissions shall be monitored at the outlet of the SO_2 control device.

(b) An "as fired" fuel monitoring system shall be used to determine SO_2 emissions, in accordance with 40 CFR 60.47a(b)(3).

(c) The procedures established in 40 CFR Part 60.47a(i) shall be used to conduct monitoring system performance evaluations.

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

4. NAC 445B.3405

Compliance, Monitoring, Recordkeeping and Reporting (continued)

b. **Monitoring** (continued)

(6) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the SO_2 concentration (in ppm), SO_2 percent reduction, volumetric gas flow (in SCFH), and SO_2 mass emissions (in lb/hr and lb/MMBtu), as measured by the CEMS required in A.4.b.(5) of this section, on a 1-hour, 3-hour, 24-hour and 30-day periods. Percent SO_2 reduction will be determined on a 30-day rolling period. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in NAC 445B.256 to NAC 445B.267, 40 CFR Part 60.47a, 40 CFR Part 60, Appendix B, Performance Specifications, 40 CFR Part 75, Part 75.11, 40 CFR Part 75 Subpart B; and the requirements for the annual Relative Accuracy Test Audit, as prescribed in 40 CFR Part 60, Appendix F.

(7) The results of the 1-hour average for SO_2 emissions (in lb/hr), determined in A.4.b.(6) of this section, shall be divided by 2 to obtain the average Sulfur emissions in lb/hour.

(8) Install, calibrate, operate and maintain a NO_x continuous emissions monitor system (CEMS) (consisting of a NO_x pollutant concentration monitor and a flow monitoring device) to continuously measure the concentration of NO_x (in ppm), volumetric gas flow (in SCFH), and NO_x emissions rate (in lb/MMBtu) from **S2.001**. The CEMS will be installed at an appropriate location in the exhaust stack of **S2.001** to accurately and continuously measure the NO_x concentration in **S2.001** in accordance with the requirements prescribed in NAC 445B.256 to NAC 445B.267, 40 CFR Part 60.47a(c), 40 CFR Part 60, Appendix B, Performance Specification 2, 40 CFR Part 75, Part 75.11, 40 CFR Part 75 Subpart B; and the requirements for the annual Relative Accuracy Test Audit, as prescribed in 40 CFR Part 60, Appendix F. The NOx CEMS installed to meet the requirements of 40 CFR Part 75 may be used to meet the requirements of 40 CFR Part 60.47(c). The requirements established in 60.49a continue to apply, except that **the Permittee** shall also meet the requirements of 40 CFR Part 60.49a shall not include data substituted using the missing data procedures in subpart D of 40 CFR Part 75, nor shall the data have been bias adjusted according to the procedures of 40 CFR Part 75. The procedures established in 40 CFR Part 60.47a(i) shall be used to conduct monitoring system performance evaluations.

(9) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the NO_x concentration (in ppm), volumetric gas flow (in SCFH), and NO_x emissions rate (in lb/MMBtu and ton/year), as measured by the CEMS required in A.4.b.(8) of this section, on a 24-hour, 30-day and 12-month rolling period. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in NAC 445B.256 to NAC 445B.267, 40 CFR Part 60, Appendix B, Performance Specification 2, 40 CFR Part 75, Part 75.11, 40 CFR Part 75 Subpart B; and the requirements for the annual Relative Accuracy Test Audit, as prescribed in 40 CFR Part 60, Appendix F.

(10) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the oxygen or carbon dioxide content of the flue gases at each location where sulfur dioxide or nitrogen oxides emissions are monitored (40 CFR Part 60.47a(d)). The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in NAC 445B.256 to NAC 445B.267.

(11) Install, calibrate, operate and maintain a continuous opacity monitoring system to continuously measure and record the opacity from **S2.001**. The continuous opacity monitoring system will be installed at an appropriate location in the discharge stack of **S2.001** to accurately and continuously measure the opacity of **S2.001** in accordance with the requirements prescribed in NAC 445B.256 to NAC 445B.267, 40 CFR Part 60.47a(a), 40 CFR Part 60, Appendix B, Performance Specification 1, and 40 CFR Part 75.10. If opacity interference due to water droplets exists in the stack, the opacity is monitored upstream of the interference.

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

4. NAC 445B.3405

Compliance, Monitoring, Recordkeeping and Reporting (continued)

b. **Monitoring** (continued)

(12) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the opacity (in percent opacity) as measured by the continuous opacity monitoring system required in A.4.b.(11) of this section. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in NAC 445B.256 to NAC 445B.267, 40 CFR Part 60.47a(a), 40 CFR Part 60, Appendix B, Performance Specification 1, 40 CFR Part 75.10 and 40 CFR Part 75.14.

(13) Install, calibrate, operate and maintain a CO continuous emissions monitor system (CEMS) (consisting of a CO pollutant concentration monitor and a flow monitoring device) to continuously measure the concentration of CO (in ppm), volumetric gas flow (in SCFH), and CO emissions rate (in lb/MMBtu) from **S2.001**, on a 3-hour and 24-hour rolling period. The CEMS will be installed at an appropriate location in the exhaust stack of **S2.001** to accurately and continuously measure the CO concentration in **S2.001** in accordance with the requirements prescribed in NAC 445B.256 to NAC 445B.267 and 40 CFR Part 60, Appendix B, Performance Specification 4.

(14) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the CO concentration (in ppm), volumetric gas flow (in SCFH), and CO emissions rate (in lb/MMBtu), as measured by the CEMS required in A.4.b.(13) of this section. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in NAC 445B.256 to NAC 445B.267 and 40 CFR Part 60, Appendix B, Performance Specification 4.

(15) Install, calibrate, operate and maintain a fuel flow meter to continuously measure the mass amount of No. 2 distillate fuel oil (in pounds-mass) combusted in **S2.001** during start-up conditions. The fuel flow meter will be installed at an appropriate location in the fuel delivery system to accurately and continuously measure the fuel combusted in **S2.001** in accordance with the requirements prescribed in 40 CFR Part 75.

(16) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the mass amount of No. 2 distillate fuel oil (in pounds-mass) as measured by the fuel flow meter required in A.4.b.(15) of this section. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in 40 CFR Part 75.

(17) Using either the Flow Proportional or Manual Method described in 40 CFR Part 75, Appendix D 2.2.1, 2.2.3, or 2.2.4 prepare a sample representative of the No. 2 distillate fuel oil combusted in **S2.001** for each day that a start-up occurs (or a composite sample representative of the entire tank upon delivery of No. 2 distillate fuel oil to the tank) while combusting that fuel. The sulfur content of the fuel oil sample shall be determined in accordance with the requirements prescribed in 40 CFR Part 75, Appendix D. The gross calorific value of this sample will be determined in accordance with ASTM D240-87 (Re-approved 1991), "Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter" or ASTM D2382-88, "Standard Test Method for Heat or Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High Precision Method) and the requirements prescribed in 40 CFR Part 75, Appendix F, Section 3.3.6.2."

(18) Within 180 days of initial startup of **S2.001**, the permittee will assemble the information required in A.b.4.20.(i) of this section such that BAPC can evaluate the percent reductions established for SO_2 in A.2.a.8 of this Section, based on actual performance of **S2.001**. The percent reductions will be adjusted according to the procedures outlined in A.4.b.20.(ii) of this Section. The Permittee will provide the assembled information postmarked within 240 days of initial startup.

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

4. NAC 445B.3405

Compliance, Monitoring, Recordkeeping and Reporting (continued)

b. **Monitoring** (continued)

(19) The permittee will provide the information required in A.4.b.20.(i) of this section such that BAPC can re-evaluate the percent reductions values established for SO_2 in A.2.a.8 of this Section within 180 days of any change in the 30-day rolling period fuel sulfur content, as determined in A.4.b.3 of this section, in excess of ±0.2%. The percent reductions will be adjusted according to the procedures outlined in A.4.b.20.(ii) of this Section.

(20) Procedure for truing percent reductions values in Section A.2.a.8 of this Section, as required by A.4.b(18) or (19).

(i) The permittee will provide actual performance of **S2.001** as determined by data gathered by the CEMS and fuel sulfur monitoring for the preceding 180 day period. Data shall consist of:

(a) As fired coal sulfur content on both a 24-hour and 30-day rolling period, as specified in A.4.b.(3) and (4) of this section.

(b) Actual SO_2 percent removal on a 30-day rolling period, using the method specified in A.4.b.(5)(ii) of this section.

(c) Actual SO_2 emissions, in pounds per million BTU, on a 24-hour rolling period, using the method specified in A.4.c.(4) of this section.

(ii) Within 60 days of the submittal required in A.4.b.20(i), the Bureau of Air Pollution Control (BAPC) will determine the basis to adjust the percent removal efficiencies in A.2.a.8(i)(b) and (ii)(b) as follows:

(a) BAPC will increase or decrease the percent SO_2 removal efficiency criteria in A.2.a.8 of this section if the data show there is greater than a ±1.0% change in the SO_2 removal efficiency.

c. **Recordkeeping**

The Permittee will maintain a contemporaneous log containing at a minimum, the following recordkeeping for each day, or part of a day that **S2.001** is operating under this operating scenario:

(1) The total hourly quantity of:

i. Sub-bituminous coal (in tons) combusted, for each hour of operation based on the data recorded by the CDCS as required in A.4.b.(2) of this section.

ii. Fuel Oil (in lbs-mass) combusted, for each hour of operation, during boiler start-up, based on the data recorded by the CDCS as required in A.4.b.(16) of this section.

(2) Daily hours of operation:

i. The total daily hours of operation for the corresponding date.

ii. For boiler start-up, record the total hours of start-up operations while combusting fuel oil and hours of start-up operations while combusting sub-bituminous coal for the corresponding date.

(3) The moisture, ash and sulfur content of the coal, as required in A.4.b.3 of this section. The average heat content of the sub-bituminous coal in Btu/ton, and the fuel oil in Btu/lb-mass (during boiler start-up), combusted for the corresponding date. The heat content of the sub-bituminous coal will be based on the gross calorific value determined in A.4.b.(4) of this section. The heat content of the fuel oil will be based on the gross calorific value determined in A.4.b.(17) of this section.

(4) The average hourly heat input of the sub-bituminous coal, or fuel oil combusted, in MMBtu per hour. The hourly heat inputs will be calculated from the hourly fuel usage rates recorded in A.4.c.(2) of this section, and the heat content of the fuel as recorded in A.4.c.(3) of this section.

Sample Calculation:
(tons-coal/hr)(Btu/ton-coal) = Btu/hr or MMBtu/hr
or
(lb-mass fuel oil/hr)(Btu/lb-mass) = Btu/hr or MMBtu/hr

Section V. Specific Operating Conditions (continued)

A. Emission Unit #S2.001 - Pulverized Coal Fired Boiler (continued)

4. NAC 445B.3405

Compliance, Monitoring, Recordkeeping and Reporting (continued)

c. **Recordkeeping** (continued)

(5) The hourly emission rate of PM and PM_{10} each:

(i) In pounds per MMBtu (lbs/MMBtu). The hourly emission rates will be calculated from the heat content of the fuel determined in A.4.b.(4) of this section, and the emission factor derived in A.4.a.(14) of this section.

Sample Calculation:
(tons-coal/Btu)(lb/tons-coal) = lbs-PM/Btu or lbs-PM/MMBtu
(tons-coal/Btu)(lb/tons-coal) = lbs-PM_{10}/Btu or lbs-PM_{10}/MMBtu

(ii) In pounds per hour (lbs/hr). The hourly emission rates will be calculated from the hourly tonnage of coal combusted, as determined in A.4.b.(1) of this section, the emission factor derived in A.4.a.(14) of this section,.

Sample Calculation:
(tons-coal/hour)(lb/tons-coal) = lbs-PM/hr
(tons-coal/hr)(lb/tons-coal) = lbs-PM_{10}/Btu

(6) The emission rates of sulfur and SO_2 each, in pounds per hour (lbs/hr) and pounds per million Btu (lbs/MMBtu) measured by the CEMS required in A.4.b.(6) of this section; and the "as fired" fuel monitoring required in A.4.b.(5)(ii) of this section, for each averaging period described below:

(i). The sulfur emissions in pounds per hour (lbs/hr) for each 1-hour period. Sulfur emissions will be one-half of the SO_2 emissions measured.
(ii). The Sulfur and SO_2 emissions in pounds per million Btu (lbs/MMBtu)
(iii) The percent reduction levels required in A.2.a.10 of this section on a 30-day rolling period. (NSPS Subpart Da requirement)
(iv) The percent reduction levels required in A.2.a.8 of this section on a 30-day rolling period. (BACT requirement)

The compliance determination procedures established in 40 CFR Part 60.48a(c) will be used to convert the continuous monitoring data into units of the applicable standards (lb/MMBtu and lbs/hr, 3-hour, 24-hour and 30-day rolling average periods and percent reduction).

(7) The hourly emissions rate of NO_x in pounds per million Btu (lbs/MMBtu) and the percent reduction levels for each 30-day rolling average period measured by the CEMS required in A.4.b.(8) of this section. The compliance determination procedures established in 40 CFR Part 60.48a(d) will be used to convert the continuous monitoring data into units of the applicable standard (lb/MMBtu, 24-hour, 30-day, annual rolling average periods, percent reduction and 3-hour average during boiler start-up).

(8) The measured opacity (in percent opacity) from the continuous opacity monitoring system required in A.4.b.(13) of this section. The opacity will be determined from reducing all data from the successive 10-second readings and recorded for the following:

(i). Each 6-minute average, except for one 6-minute period per hour of up to 27 percent opacity as established in NAC 445B.22017.1(b) and as set forth in 40 CFR Part 60.13(h).
(ii). Each 6-minute average, except for one 6-minute period per hour of up to 27 percent opacity as established in 40 CFR Part 60.42a(b).

(9) The emissions rate of CO in pounds per million Btu (lbs/MMBtu) and pounds per hour (lbs/hr) measured by the CEMS required in A.4.b.(13) of this section. The compliance determination procedures established in 40 CFR 60.48a will be used to convert the continuous monitoring date into units of the applicable standard (lbs/MMBtu and lbs/hr, 3-hour (steady state and boiler start-up) and 24-hour rolling average periods).

Section V. Specific Operating Conditions (continued)

B. Emission Unit* S2.002 through S2.005 – *Backup Combustion Turbines.

System 02A	***Back-up Combustion Turbines, No. 2 Distillate Fuel Oil Fired***
S2.002	***Simple Cycle Combustion Turbine #1****, General Electric, Model-LM6000, Serial Number-TBD, Manufacture Date TBD. 373.3 million Btu/hr Maximum Heat Input, 35 MW Output*
S2.003	***Simple Cycle Combustion Turbine #2****, General Electric, Model-LM6000, Serial Number-TBD, Manufacture Date TBD. 373.3 million Btu/hr Maximum Heat Input, 35 MW Output*
S2.004	***Simple Cycle Combustion Turbine #3****, General Electric, Model-LM6000, Serial Number-TBD, Manufacture Date TBD. 373.3 million Btu/hr Maximum Heat Input, 35 MW Output*
S2.005	***Simple Cycle Combustion Turbine #4****, General Electric, Model-LM6000, Serial Number-TBD, Manufacture Date TBD. 373.3 million Btu/hr Maximum Heat Input, 35 MW Output*

1. NAC 445B.3405
   Air Pollution Equipment
   a. Emissions from **S2.002 through S2.005** each shall be controlled by water injection (BACT requirement), low sulfur fuel and good combustion controls. Emissions from **S2.002 through S2.005** shall be ducted to the following emissions control system with 100% capture and a maximum volume flow rate of 205,312 dry standard cubic feet per minute (DSCFM) per exhaust stack:
      (1) Selective Catalyst Reduction (SCR) system for the control of NOx emissions. The SCR shall utilize ammonia injection into the SCR at a volume specified by the manufacturer.
      (2) Oxidation catalyst system for the control of CO emissions. If the selected BACT emission level of 6.0 ppmv, at 15% O_2, can be achieved in operation without utilizing the catalyst technology, the Permittee may petition the Director and the EPA Regional Administrator to reconsider the BACT technology selection.

   b. Each turbine has a stack with the following characteristics:

Stack Height:	105.00 ft	Stack Velocity:	114.8 ft/sec
Stack Diameter:	10.5 ft	Stack Temperature:	743.9 ^{o}F

2. NAC 445B.3405
   Emission Limits
   a. On and after the date of startup of **S2.002 through S2.005**, each, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of **S2.002 through S2.005**, each, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of **PM_{10} and PM** (particulate matter less than 10 microns in diameter and particulate matter) to the atmosphere will not exceed **13.7** pounds per hour.

      (2) SIP 445.731 *Federally Enforceable SIP* - The discharge of **PM** to the atmosphere will not exceed **0.26** pound per million Btu.

      (3) NAC 445B.2203 – The discharge of **PM_{10}** to the atmosphere will not exceed **0.26** pound per million Btu.

      (4) NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 13.7 pounds per hour, filterable and condensable.

      (5) SIP Article 8.2.1.1 *Federally Enforceable SIP* – The discharge of **sulfur** to the atmosphere will not exceed **149.3** pounds per hour.

      (6) NAC 445B.22047 – The discharge of **sulfur** to the atmosphere will not exceed **149.3** pounds per hour.

      (7) NAC 445B.305 – The discharge of **SO_2** (sulfur dioxide) to the atmosphere will not exceed **19.1** pounds per hour.

Section V. Specific Operating Conditions (continued)

B. Emission Unit* S2.002 through S2.005 - *Backup Combustion Turbines. (continued)

2. NAC 445B.3405

a. Emission Limits (continued)

(8) NAC 445B.305 – The discharge of **NO_x** (oxides of nitrogen) to the atmosphere will not exceed **38.2** tons per year.

(9) NAC 445B.305 *BACT Emission Limit* – The discharge of **NO_x** to the atmosphere will not exceed **6.0** parts per million by volume (ppmv), at 15 percent oxygen and on a dry basis, based on a 3-hour rolling period.

(10) NAC 445B.305 – The discharge of **CO** (carbon monoxide) to the atmosphere will not exceed **5.3** pounds per hour.

(11) NAC 445B.305 *BACT Emission Limit* – The discharge of **CO** to the atmosphere will not exceed **6.0** ppmv at 15 percent oxygen and on a dry basis, based on a 3-hour rolling period.

(12) NAC 445B.305 – The discharge of **VOC** (volatile organic compounds) to the atmosphere will not exceed **1.5** pounds per hour, or exceed **6.7** tons per year.

(13) NAC 445B.305 *BACT Emission Limit* – The discharge of Sulfuric Acid Mist to the atmosphere will not exceed **2.9** pounds per hour.

(14) NAC 445B.22017 – The opacity from **S2.002 through S2.005** each will not equal or exceed **20%**. The opacity must be determined as set forth in 445B.22017.1(a) or (b).

(15) SIP 445.721 *Federally Enforceable SIP* - The opacity from **S2.002 through S2.005** will not equal or exceed **20%** for a period or periods aggregating more than 3 minutes in any one hour.

(16) NAC 445B.305 – The discharge of Manganese (Mn) from **S2.002 through S2.005**, each, will not exceed **0.295** pound per hour.

b. New Source Performance Standards - Subpart GG-Standards of Performance for Stationary Gas Turbines (40 CFR Part 60.330)

On and after the sixtieth day after achieving the maximum production rate at which **S2.002 through S2.005** will be operated, but not later than 180 days after initial startup, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from **S2.002 through S2.005** the following pollutants in excess of the following specified limits:

(1) Emissions of **NO_x** (nitrogen oxides) in excess of **0.0121** percent (121 ppm) by volume at 15 percent oxygen and on a dry basis (40 CFR Part 60.332(a)(1)). This limit assumes an F value of 0, as defined in 40 CFR Part 60.332(a)(3). Should testing demonstrate an F value greater than zero, this emission limit will be amended accordingly.

(2) Emissions of **SO_2** (Sulfur Dioxide) in excess of **0.015** percent (150 ppm) by volume at 15 percent oxygen and on a dry basis (40 CFR Part 60.332(a)).

(3) ***The Permittee*** will not burn any fuel that contains sulfur in excess of **0.8** percent by weight (40 CFR Part 60.333(b)).

(4) Stationary gas turbines using water or steam injection for control of NO_x emissions are exempt from paragraph B.2.b.1 when ice fog is deemed a traffic hazard by the owner or operator of the gas turbine (40 CFR Part 60.332(f)).

(5) At all times, including periods of startup, shutdown, and malfunction, ***the Permittee*** shall, to the extent practicable, maintain and operate **S2.002 through S2.005** including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions (40 CFR Part 60.11(d))

Section V. Specific Operating Conditions (continued)

B. Emission Unit* S2.002 through S2.005 - *Backup Combustion Turbines. (continued)

3. NAC 445B.3405

Operating Parameters

a. BACT Operating Parameter - **S2.002 through S2.005**, each, may combust No. 2 distillate fuel oil only, with a maximum sulfur content of 0.05 weight percent sulfur.

b. **S2.002 through S2.005**, each, shall not operate while **S2.001** is operating, except during periods of overlapping startup and shutdown.

c. The maximum operating heat input rate for **S2.002 through S2.005**, each, will not exceed 373.3 million Btu per any one-hour period.

d. **S2.002 through S2.005**, each, may operate 8,760 hours per year.

4. NAC 445B.3405

Compliance, Monitoring, Recordkeeping and Reporting

a. **Compliance/Performance Testing**

Within 60 days of the notification of initial startup of **S2.002 through S2.005**, each, as required in Section II.A.3, and after 7,000 hours of additional operation following the initial testing, but not greater than 8,760 hours of additional operation after initial testing of **S2.002 through S2.005**, each, ***the Permittee*** shall:

(1) Conduct and record a Method 5 performance test for PM on the exhaust stacks of **S2.002 through S2.005**, each, consisting of three valid runs. The Method 5 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 5 and include the back-half catch.

(2) Conduct and record a Method 201A and 202 performance test for PM_{10} on the exhaust stacks of **S2.002 through S2.005**, each, consisting of three valid runs. The Method 201A and 202 emissions tests must be conducted in accordance with 40 CFR Part 51, Appendix M, Method 201A and 202. The Method 201A and 202 emissions tests may be replaced by a Method 5 performance test, including the back-half catch. All particulate captured in the Method 5 test will be considered PM_{10} for compliance demonstration purposes.

(3) Conduct and record a Method 20 performance test for NO_x, SO_2, and oxygen on the exhaust stack of **S2.002 through S2.005**, each, consisting of three valid runs. The Method 20 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 20.

(4) Conduct and record a Method 10 performance test for CO on the exhaust stacks of **S2.002 through S2.005**, each, consisting of three valid runs. The Method 10 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 10.

(5) Conduct and record a Method 25 performance test for VOC on the exhaust stacks of **S2.002 through S2.005**, each, consisting of three valid runs. The Method 25 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 25.

(6) Conduct and record a performance test for formaldehyde on the exhaust stacks of **S2.002 through S2.005**, each, consisting of three valid runs. Use either Method 320 or 323 of 40 CFR Part 63 or ASTM D6348–03 (the percent R must be greater than or equal to 70 and less than or equal to 130).

Section V. Specific Operating Conditions (continued)

B. Emission Unit* S2.002 through S2.005 - *Backup Combustion Turbines. (continued)

4. NAC 445B.3405 (continued)

Compliance, Monitoring, Recordkeeping and Reporting

a. **Compliance/Performance Testing** (continued)

(7) Conduct and record a Method 29 performance test for Manganese on the exhaust stacks of **S2.002 through S2.005**, each, consisting of three valid runs. The Method 29 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 29.

(8) Conduct and record Method 8 performance test for H_2SO_4 on the exhaust stack of **S2.002 through S2.005** consisting of three valid runs. The Method 8 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 8.

(9) During one of the three test runs required in B.4.a.(1) of this section, conduct and record a Method 9 visual opacity observation of the discharge from the exhaust stack of **S2.002 through S2.005.** The Method 9 opacity test must be conducted in accordance with the visible emissions evaluation procedures contained in 40 CFR Part 60, Appendix A, Method 9. A certified visible emissions reader must conduct the visible emissions evaluations for a period of at least 6 minutes. The opacity readings must be averaged such that compliance with both a 6-minute average and 2, 3-minute averages are determined (40 CFR Part 60.48a(b)(3)).

(10) The performance tests will be conducted at the maximum operating heat input rate limit established in B.3.c of this section for each pollutant required to be tested, unless otherwise approved pursuant to NAC 445B.252.2 & 3. ***The Permittee*** shall make available to the director such records as may be necessary to determine the conditions of the test of performance. Operations during periods of startup, shutdown and malfunction must not constitute representative conditions of a test of performance unless otherwise specified in the applicable standard (NAC 445B.252.3).

(11) ***The Permittee*** shall give notice to the director 30 days before the test of performance to allow the director to have an observer present. A written testing procedure for the test of performance must be submitted to the director at least 30 days before the test of performance to allow the director to review the proposed testing procedures (NAC 445B.252.4).

(12) During each performance test required in B.4.a.(1) through (8) of this section, record the quantity (in pounds-mass) and heat content value of the No. 2 distillate fuel oil combusted (in Btu per pound), and include these data in the test results submitted.

(13) As a result of the most recent performance test performed in B.4.a.(1) and (2) of this section, derive emission factors for each of the following:

(i) Pounds of PM per pound-mass of No. 2 distillate fuel oil (lbs-PM/lbm-No. 2 Distillate)
pounds of PM per MMBtu of No. 2 distillate fuel oil (lbs-PM/MMBtu)

(ii) Pounds of PM_{10} per pound-mass of No. 2 distillate fuel oil (lbs-PM_{10}/lbm-No. 2 Distillate)
pounds of PM_{10} per MMBtu of No. 2 distillate fuel oil (lbs- PM_{10} /MMBtu)

These emissions factors will be based on the average of the 3 test runs.

(14) Within 60 days after completing the performance tests and contained in B.4.a. of this section, ***the Permittee*** shall furnish the director a written report of the results of the performance tests and the resultant emissions factors. All information and analytical results of testing and sampling must be certified as to the truth and accuracy and as to their compliance with NAC 445B.001 to 445B.3497 (NAC 445B.252.8).

Section V. Specific Operating Conditions (continued)

B. Emission Unit* S2.002 through S2.005 - *Backup Combustion Turbines. (continued)

4. NAC 445B.3405 (continued)

Compliance, Monitoring, Recordkeeping and Reporting

b. **Monitoring**

The Permittee, upon startup of **S2.002 through S2.005** will:

(1) Install, calibrate, operate and maintain a fuel flow meter to continuously measure the mass amount of No. 2 distillate fuel oil (in pounds-mass) combusted in **S2.002 through S2.005**. The fuel flow meter will be installed at an appropriate location in the fuel delivery system to accurately and continuously measure the fuel combusted in **S2.002 through S2.005** in accordance with the requirements prescribed in 40 CFR Part 75.

(2) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the mass amount of No. 2 distillate fuel oil (in pounds-mass) as measured by the fuel flow meter required in B.4.b.(1) of this section. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in 40 CFR Part 75.

(3) Using either the Flow Proportional or Manual Method described in 40 CFR Part 75, Appendix D 2.2.1, 2.2.3, or 2.2.4 prepare a sample representative of the No. 2 distillate fuel oil combusted in **S2.002 through S2.005** for each day of operation (or a composite sample representative of the entire tank upon delivery of No. 2 distillate fuel oil to the tank) while combusting that fuel. The sulfur content of the fuel oil sample shall be determined in accordance with the requirements prescribed in 40 CFR Part 75, Appendix D. The gross calorific value of this sample will be determined in accordance with ASTM D240-87 (Re-approved 1991), "Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter" or ASTM D2382-88, "Standard Test Method for Heat or Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High Precision Method) and the requirements prescribed in 40 CFR Part 75, Appendix F, Section 3.3.6.2."

(4) The owner or operator of any stationary gas turbine subject to the provisions of this subpart and using water injection to control NOx emissions shall install and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine. This system shall be accurate to within ±5.0 percent and shall be approved by the Administrator. (40 CFR 60.334(a)).

(5) The owner or operator of any stationary gas turbine subject to the provisions of this subpart shall monitor sulfur content and nitrogen content of the fuel being fired in the turbine. The frequency of determination of these values shall be as follows: (40 CFR 60.334(b))

(i) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.

(ii) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with paragraph B.4.b.5 of this section.

Section V. Specific Operating Conditions (continued)

B. Emission Unit* S2.002 through S2.005 - *Backup Combustion Turbines. (continued)

4. NAC 445B.3405 (continued)

Compliance, Monitoring, Recordkeeping and Reporting

b. **Monitoring** (continued)

(6) To meet the requirements of B.4.b.5, the owner or operator shall use the methods specified below to determine the nitrogen and sulfur contents of the fuel being burned. The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency. (40 CFR 60.335(e))

(i) To compute the nitrogen oxides emissions, the Permittee shall use analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.

(ii) The Permittee shall determine compliance with the sulfur content standard in B.2.b of this Section by using ASTM D 2880–71, 78, or 96 for liquid fuels.

(7) Substitute any missing fuel flow meter data in accordance with the requirements prescribed in 40 CFR Part 75, Appendix D, Section 2.4.3.2. Substitute any missing sulfur content data in accordance with the requirements prescribed in 40 CFR Part 75, Appendix D, Section 2.4.1. Substitute any missing gross calorific value data in accordance with the requirements prescribed in 40 CFR Part 75, Appendix D, Section 2.4.2.

(8) Install, calibrate, operate and maintain a NOx continuous emissions monitor system (CEMS) (consisting of a NOx pollutant concentration monitor and an O_2 or CO_2 diluent gas analyzer) to continuously measure the concentration of NOx (in ppm) and O_2 or CO_2 concentrations (in percent O_2 or CO_2) from **S2.002 through S2.005**, each. The CEMS will be installed at an appropriate location in the exhaust stacks of **S2.002 through S2.005** to accurately and continuously measure the NOx concentration in **S2.002 through S2.005** in accordance with the requirements prescribed in 40 CFR Part 75, Part 75.12 and Appendix F, 40 CFR Part 60, Appendix B and Appendix F.

(9) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the NOx concentration (in ppm and ton/year), as measured by the CEMS required in B.4.b.(8) of this section, on a 3-hour and 12-month rolling period. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in 40 CFR Part 75, Part 75.12 and Appendix F, 40 CFR Part 60, Appendix B and Appendix F.

(10) Install, calibrate, operate and maintain a CO continuous emissions monitor system (CEMS) to continuously measure the concentration of CO (in ppm) from **S2.002 through S2.005,** each. The CEMS will be installed at an appropriate location in the exhaust stack of **S2.002 through S2.005** to accurately and continuously measure the CO concentration in **S2.002 through S2.005** in accordance with the requirements prescribed in 40 CFR Part 75, Part 75.12 and Appendix F, 40 CFR Part 60, Appendix B and Appendix F.

(11) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the CO concentration (in ppm and lb/hr) as measured by the CEMS required in B.4.b.(10) of this section on a 3-hour rolling period. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in 40 CFR Part 75, Part 75.12 and Appendix F, 40 CFR Part 60, Appendix B and Appendix F.

Section V. Specific Operating Conditions (continued)

B. Emission Unit* S2.002 through S2.005 - *Backup Combustion Turbines. (continued)

4. NAC 445B.3405 (continued)

Compliance, Monitoring, Recordkeeping and Reporting

b. **Monitoring** (continued)

(12) Install, calibrate, operate and maintain a continuous opacity monitoring system to continuously measure and record the opacity from **S2.002 through S2.005**. The continuous opacity monitoring system will be installed at an appropriate location in the discharge stack of **S2.002 through S2.005** to accurately and continuously measure the opacity of **S2.002 through S2.005** in accordance with the requirements prescribed in NAC 445B.256 to NAC 445B.267, 40 CFR Part 60.47a(a), 40 CFR Part 60, Appendix B, Performance Specification 1, and 40 CFR Part 75.10. If opacity interference due to water droplets exists in the stack, the opacity is monitored upstream of the interference.

(13) Install, calibrate, operate and maintain a Continuous Data Collection System (CDCS) to continuously record the opacity (in percent opacity) as measured by the continuous opacity monitoring system required in A.4.b.(12) of this section. The CDCS will be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications and the requirements prescribed in NAC 445B.256 to NAC 445B.267, 40 CFR Part 60.47a(a), 40 CFR Part 60, Appendix B, Performance Specification 1, 40 CFR Part 75.10 and 40 CFR Part 75.14.

c. **Recordkeeping**

The Permittee will maintain a CDCS or a contemporaneous log containing at a minimum, the following recordkeeping for each day, or part of a day that **S2.002 through S2.005** is operating under this operating scenario:

(1) The name of the operating scenario and the calendar date of any required monitoring.

(2) The total hourly mass amount of No. 2 distillate fuel oil combusted, in pounds-mass (lbm) for each hour of operation based on the data recorded by the CDCS required in B.4.b.(2) of this section.

(3) The total daily hours of operation for the corresponding date.

(4) The heat content of the fuel combusted for the corresponding date, in Btu per pound (Btu/lb) The heat content of the fuel will be based on the gross calorific value determined in B.4.b.(3) of this section.

(5) The hourly heat input of the No. 2 distillate fuel oil combusted, in MMBtu per hour. The hourly heat inputs will be calculated from the hourly fuel flow rates recorded in B.4.c.(2) of this section, and the heat content of the fuel recorded in B.4.c.(3) of this section.

Sample Calculation:

(lbm-No. 2 Distillate/hr)(Btu/lbs) = Btu/hr or MMBtu/hr

(6) The hourly emission rate of PM and PM_{10} each, in pounds per hour (lbs/hr) The hourly emission rates will be calculated from the hourly quantity of No. 2 distillate fuel oil combusted determined in B.4.c.(2) of this section, and the emission factor derived in B.4.a.(13) of this section.

Sample Calculation:

(lbm-No. 2 Distillate/hr)(lbs-PM/lbm-No. 2 Distillate) = lbs-PM/hr
or
(MMBtu – No. 2 Distillate/hr)(lbs-PM/MMBtu – No. 2 Distillate) = lbs-PM/hr

Section V. Specific Operating Conditions (continued)

B. Emission Unit* S2.002 through S2.005 -** ***Backup Combustion Turbines. (continued)

4. NAC 445B.3405 (continued)

Compliance, Monitoring, Recordkeeping and Reporting

c. **Recordkeeping** (continued)

(7) The hourly emission rate of PM and PM_{10} each, in pounds per MMBtu (lbs/MMBtu) The hourly emission rates will be calculated from the heat content of the fuel determined in B.4.b.(3) of this section, and the emission factors derived in B.4.a.(13) of this section.

Sample Calculation:

(lbm-No. 2 Distillate/Btu)(lbs-PM/lbm-No. 2 Distillate) = lbs-PM/Btu or lbs-PM/MMBtu

(8) The hourly emission rate of sulfur and SO_2 in pounds per hour (lbs/hr) The hourly emission rate will be calculated from the sulfur content of the fuel determined in B.4.b.(3) and the mass amount of fuel combusted as determined in B.4.b.(2) of this section.

Sample Calculation:

(% sulfur-No. 2 Distillate/100)(lbm-No. 2 Distillate/hr) = lbs-sulfur/hr
(% sulfur-No. 2 Distillate/100)(lbm-No. 2 Distillate/hr)(2) = lbs-SO_2/hr

(9) The measured NOx emissions from the CEMS required in B.4.b.(8) of this section. The NOx emissions will be determined from reducing all data from the continuous readings and recorded for the NOx concentrations in parts per million by volume (ppmv) for each 24-hour period (40 CFR Part 75.12)

(10) The measured CO emissions from the CEMS required in B.4.b.(10) of this section. The CO emissions will be determined from reducing all data from the continuous readings and recorded for the CO concentrations in parts per million by volume (ppmv) for each 24-hour period (40 CFR Part 75.12).

d. **Reporting**

The Permittee will:

(1) *Federally Enforceable New Source Performance Standard Requirement* - Subpart GG-Standards of Performance for Stationary Gas Turbines (40 CFR Part 60.330)

For the purpose of reports required under 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(i) Nitrogen oxides. Any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with B.2.b.1 by the performance test required in 40 CFR 60.8 or any period during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the performance test required in 40 CFR 60.8. Each report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under 40 CFR 60.335(c)(1).

(ii) Sulfur dioxide. Any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent.

(iii) Ice fog. Each period during which an exemption provided in B.2.b.4 is in effect shall be reported in writing to the Administrator quarterly. For each period the ambient conditions existing during the period, the date and time the air pollution control system was deactivated, and the date and time the air pollution control system was reactivated shall be reported. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.

Section V. Specific Operating Conditions (continued)

C. Emission Units **PF1.001 through PF1.009 –** ***Fugitive Coal Handling Operations, Coal Rail Car Unloading.***

System 03	***Coal Rail Car Unloading Operations***
PF1.001	***Rail Car transfer to Hoppers***
PF1.002	***Hopper transfer to Feeder 1A***
PF1.003	***Hopper transfer to Feeder 1B***
PF1.004	***Hopper transfer to Feeder 1C***
PF1.005	***Hopper transfer to Feeder 1D***
PF1.006	***Feeder 1A transfer to Conveyor 2A or 2B***
PF1.007	***Feeder 1B transfer to Conveyor 2A or 2B***
PF1.008	***Feeder 1C transfer to Conveyor 2A or 2B***
PF1.009	***Feeder 1D transfer to Conveyor 2A or 2B***

1. NAC 445B.3405
   Air Pollution Equipment
   Emissions from **PF1.001 through PF1.009** shall be controlled by fogging water sprays and enclosures located at **PF1.001 through PF1.009**.

2. NAC 445B.3405
   Emission Limits
   On and after the date of startup of **PF1.001 through PF1.009**, Permittee will not discharge or cause the discharge into the atmosphere from **PF1.001 through PF1.009**, the following pollutants in excess of the following specified limits:
   a. **PF1.001** – Rail – Car transfer to Hoppers
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.001** will not exceed **0.124** pound per hour, or exceed **0.013** ton per year. This limit is less than the **94.962** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.001** will not exceed **0.124** pound per hour, or exceed **0.013** ton per year. This limit is less than the **94.962** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.001** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.001** will not equal or exceed 20% in accordance with NAC 445B.22017.

   b. **PF1.002 through PF1.005** – Hopper transfer to Feeders
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.002 through PF1.005** will not exceed **0.031** pound per hour, each, or exceed **0.013** ton per year, combined. This limit is less than the **94.962** pounds per hour, combined, maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.002 through PF1.005** will not exceed **0.031** pound per hour, combined, or exceed **0.013** ton per year, each, or **0.013** ton per year, combined. This limit is less than the **94.962** pounds per hour, combined, maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.002 through PF1.005** each will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.002 through PF1.005** each will not equal or exceed 20% in accordance with NAC 445B.22017.

Section V. Specific Operating Conditions (continued)

C. Emission Units* PF1.001 through PF1.009 – *Fugitive Coal Handling Operations, Coal Rail Car Unloading. (continued)

2. NAC 445B.3405 Emission Limits (continued)
   c. **PF1.006 through PF1.009** – Feeder Transfer to Conveyor
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.006 through PF1.009** will not exceed **0.031** pound per hour, each, or exceed **0.013** ton per year, combined. This limit is less than the **94.962** pounds per hour, combined, maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.006 through PF1.009** will not exceed **0.031** pound per hour, each, or exceed **0.013** ton per year, combined. This limit is less than the **94.962** pounds per hour, combined, maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.006 through PF1.009** each will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.006 through PF1.009** each will not equal or exceed 20% in accordance with NAC 445B.22017.

3. NAC 445B.3405
   Operating Parameters
   a. Maximum allowable throughput for **PF1.001** will not exceed **5,000.0** tons of coal per any one-hour period.
   b. Maximum allowable through for **PF1.002 through PF1.009**, each, will not exceed **1,250.0** tons of coal per any one-hour period.
   c. Maximum allowable throughput for **System 03** will not exceed **1,085,000** tons of coal per 12-month rolling period.
   d. **PF1.002 through PF1.009** each may operate 8,760 hours per year.

4. NAC 445B.3405
   a. Monitoring and Recordkeeping
      Upon commencement of operations, ***Permittee will***:
      (1) Monitor and record the weight rate of each batch or charge load of coal to **System 03** on a daily basis:
         (i) Monitor and record weight of coal unloaded from rail car at **PF1.001**.
         (ii) Monitor and record weight of coal transferred to **PF1.002 through PF1.005**.
         (iii) Monitor and record weight of coal transferred to **PF1.006 through PF1.009**.

      (2) Monitor and record the hours of operation of **PF1.001 through PF1.009** on a daily basis.

      (3) Conduct and record a weekly visible emission inspection on **PF1.001 - PF1.009** while **System 03** is operating; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

Section V. Specific Operating Conditions (continued)

D. Emission Units **PF1.010 through PF1.015 –** ***Fugitive Coal Handling Operations, Coal Reclaim.***

System 04	***Coal Reclaim Operations***
PF1.010	***Conveyor 2A or 2B transfer to Lowering Well/Stockpile***
PF1.011	***Front Loader transfer to Reclaim Weigh Hopper/Feeder 4A***
PF1.012	***Front Loader transfer to Reclaim Weigh Hopper/Feeder 4B***
PF1.013	***Front Loader transfer to Reclaim Weigh Hopper/Feeder 4C***
PF1.014	***Front Loader transfer to Reclaim Weigh Hopper/Feeder 4D***
PF1.015	***Weigh Hopper/Feeder 4A, 4B, 4C and/or 4D transfer to Conveyor 6A or 6B [completely sealed tunnel system]***

1. NAC 445B.3405
   Air Pollution Equipment
   a. Emissions from **PF1.010** shall be controlled by fogging water sprays and enclosures located at **PF1.010.**
   b. Emissions from **PF1.011 through PF1.014** are uncontrolled.
   c. Emissions from **PF1.015** shall be controlled by a completely sealed tunnel system.

2. NAC 445B.3405
   Emission Limits
   On and after the date of startup of **PF1.010 through PF1.015**, Permittee will not discharge or cause the discharge into the atmosphere from **PF1.010 through PF1.015**, the following pollutants in excess of the following specified limits:

   a. **PF1.010** – Conveyor transfer to Stockpile
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.010** will not exceed **0.124** pound per hour, or exceed **0.013** ton per year. This limit is less than the **94.962** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of $\mathbf{PM_{10}}$ (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.001** will not exceed **0.124** pound per hour, or exceed **0.013** ton per year. This limit is less than the **94.962** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.010** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.010** will not equal or exceed 20% in accordance with NAC 445B.22017.

   b. **PF1.011 through PF1.014** – Front Loader transfer to Weigh Hopper/Feeders
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.011 through PF1.014** will not exceed **0.025** pound per hour, each, or exceed **0.027** ton per year, combined. This limit is less than the **77.588** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of $\mathbf{PM_{10}}$ (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.011 through PF1.014** will not exceed **0.025** pound per hour, each, or exceed **0.027** ton per year, combined. This limit is less than the **77.588** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.011 through PF1.014, each,** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.011 through PF1.014, each,** will not equal or exceed 20% in accordance with NAC 445B.22017.

Section V. Specific Operating Conditions (continued)

D. Emission Units* PF1.010 through PF1.015 – *Fugitive Coal Handling Operations, Coal Reclaim. (continued)

2. NAC 445B.3405 Emission Limits (continued)
   c. **PF1.015** – Weigh Hopper/Feeders transfer to Conveyors
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.015** will not exceed **0.000** pound per hour, or exceed **0.000** ton per year. This limit is less than the **77.588** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.015** will not exceed **0.000** pound per hour, or exceed **0.000** ton per year. This limit is less than the **77.588** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.015** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.015** will not equal or exceed 20% in accordance with NAC 445B.22017.
      (5) NAC445B.305 – The opacity from **PF1.015** will not equal or exceed 0%.

   d. New Source Performance Standards - Subpart Y - Standards of Performance for Coal Preparation Plants (40 CFR Part 60.250) On and after the sixtieth day after achieving the maximum production rate at which **PF1.010 and PFPF1.015** will be operated, but not later than 180 days after initial startup, Permittee will not discharge or cause the discharge into the atmosphere from **PF1.010 and PFPF1.015** the following pollutants in excess of the following specified limits:
      (1) Emissions that exhibit greater than 20 percent opacity (40 CFR Part 60.252(c))
      (2) The opacity standard set forth in this part shall apply at all times except during periods of startup, shutdown, and malfunction (40 CFR Part 60.11(c))
      (3) At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate **PF1.010 and PFPF1.015** including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions (40 CFR Part 60.11(d))

3. NAC 445B.3405
   Operating Parameters
   a. Maximum allowable throughput for **PF1.010** will not exceed **5,000.0** tons of coal per any one-hour period.
   b. Maximum allowable throughput for **PF1.011 through PF1.014**, will not exceed **500.0** tons of coal, each, or **1,000.0** tons of coal, combined, per any one-hour period.
   c. Maximum allowable throughput for **PF1.015** will not exceed **1,000.0** tons of coal per any one-hour period.
   d. Maximum allowable throughput for **System 04** will not exceed **1,085,000** tons of coal per 12-month rolling period.
   e. **PF1.010 through PF1.015** may operate 8,760 hours per year.

4. NAC 445B.3405
   a. Monitoring and Recordkeeping
      Upon commencement of operations, ***Permittee will***:
      (1) Monitor and record the weight rate of each batch or charge load of coal to **System 04** on a daily basis.
      (2) Monitor and record the hours of operation of **PF1.010 through PF1.015** on a daily basis.
      (3) Conduct and record a weekly visible emission inspection on **PF1.010 - PF1.015** while **System 04** is operating; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

Section V. Specific Operating Conditions (continued)

D. Emission Units* PF1.010 through PF1.015 – *Fugitive Coal Handling Operations, Coal Reclaim. (continued)

4. NAC 445B.3405 (continued)
   b. New Source Performance Standards (NSPS) - Notification and Record Keeping (40 CFR Part 60.7(b))
   Permittee, upon the issuance date of this permit shall:
      (1) Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

Section V. Specific Operating Conditions (continued)

E. Emission Units* S2.006 through S2.011 –*Coal Crushing Operations, Baghouse 'B' Controlled.

System 05	***Coal Crushing Operations, Baghouse 'B' Controlled***
S2.006	***Conveyor 6A or 6B transfer to Crusher Surge Bin***
S2.007	***Crusher Surge Bin transfer to Crusher Feeder 7***
S2.008	***Crusher Feeder 7 transfer to Vibrating Grizzly***
S2.009	***Vibrating Grizzly transfer to 1500 ton per hour (TPH) Crusher***
S2.010	***1500 TPH Crusher transfer to Crushing Tower Diverter Gate***
S2.011	***Crushing Tower Diverter Gate Transfer to Conveyor 8A or 8B***

1. NAC 445B.3405
   Air Pollution Equipment
   Emissions from **S2.006 through S2.011** shall be ducted to a control system consisting of a **Baghouse ('B')** with 100% capture and a maximum volume flow rate of **6,640** dry standard cubic feet per minute (dscfm). The volumetric flow rate may be determined by utilizing Method 2 - *Determination of Stack Gas Velocity and Volumetric Flow Rate* as referenced in 40 CFR Part 60, Appendix A.

Stack Height:	51.0 ft
Stack Diameter:	3.281ft
Stack Velocity:	7.89 ft/sec
Stack Temperature:	Ambient
Stack Orientation:	Horizontal or Capped

2. NAC 445B.3405
   Emission Limits
   On and after the date of startup of **S2.006 through S2.011**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of **Baghouse 'B'**, the following pollutants in excess of the following specified limits:
   a. NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.569** pound per hour, or exceed **2.493** tons per year. This limit is less than the **77.588** pounds per hour combined maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.

   b. NAC 445B.305 – The discharge of PM (particulate matter) to the atmosphere will not exceed **0.569** pound per hour. This limit is less than the **88.559** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by 3.a of this section.

   c. NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** to the atmosphere from the stack of **Baghouse 'B'** will not exceed **0.01** grain per dry standard cubic foot.

   d. SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Baghouse 'B'** stack discharge will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.

   e. NAC 445B.22017 – The opacity from the **Baghouse 'B'** stack discharge will not equal or exceed 20% in accordance with NAC 445B.22017.

Section V. Specific Operating Conditions (continued)

E. Emission Units* S2.006 through S2.011 –*Coal Crushing Operations, Baghouse 'B' Controlled. (continued)

2. NAC 445B.3405 Emission Limits (continued)
   f. New Source Performance Standards - Subpart Y - Standards of Performance for Coal Preparation Plants (40 CFR Part 60.250) On and after the sixtieth day after achieving the maximum production rate at which **S2.006 through S2.011** will be operated, but not later than 180 days after initial startup, Permittee will not discharge or cause the discharge into the atmosphere from **Baghouse 'B'** the following pollutants in excess of the following specified limits:
      (1) Emissions that exhibit greater than 20 percent opacity (40 CFR Part 60.252(c))
      (2) The opacity standard set forth in this part shall apply at all times except during periods of startup, shutdown, and malfunction (40 CFR Part 60.11(c))
      (3) At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate **S2.006 through S2.011** including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions (40 CFR Part 60.11(d))

3. NAC 445B.3405
   Operating Parameters
   a. Maximum allowable throughput for **S2.006 through S2.011** will not exceed **1,000.0** tons of coal per any one-hour period.
   b. **S2.006 through S2.011** may operate **8,760** hours per calendar year.

4. NAC 445B.3405
   a. Monitoring, Testing and Record keeping
      Upon commencement of operations, ***Permittee will***:
      (1) Monitor and record the throughput rate of coal to **S2.006 through S2.011** on a daily basis.

      (2) Monitor and record the hours of operation of **S2.006 through S2.011** on a daily basis.

      (3) Conduct and record a weekly visible emission inspection on the exhaust stack of **Baghouse 'B'** while **System 05** is operating; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

      (4) Monitor and record that the maintenance and operation of **Baghouse 'B'** is in accordance with the manufacturer's operation and maintenance guidelines, on a weekly basis. Monitor and record on a weekly basis the differential pressure drop across the **Baghouse 'B'**. Weekly records must show that observations were made, and records of any corrective actions taken.

      (5) Conduct and record a Method 5 and Method 201 or 201A (or an equivalent method as approved by the Director) performance test for PM and PM_{10} on the exhaust stack of **Baghouse 'B'** consisting of three valid runs within 60 days, but no later than 180 days, from the date of initial startup. The Method 201 or 201A emissions tests must be conducted in accordance with 40 CFR Part 51, Appendix M, Method 201 or 201A. The Method 5 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 5.

   b. New Source Performance Standards (NSPS) - Notification and Record Keeping (40 CFR Part 60.7(b))
      Permittee, upon the issuance date of this permit shall:
      (1) Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

Section V. Specific Operating Conditions (continued)

F. Emission Units* S2.012 through S2.014 –*Coal Tripper Deck, Baghouse 'C' Controlled.

System 06	***Coal Tripper Deck, Baghouse 'C' Controlled***
S2.012	***Conveyor 8A or 8B transfer to Tripper Conveyor 9***
S2.013	***Tripper Conveyor 9 transfer to Tripper***
S2.014	***Tripper transfer to Coal Silo 1, 2, 3, 4 or 5***

1. NAC 445B.3405
   Air Pollution Equipment
   Emissions from **S2.012 through S2.014** shall be ducted to a control system consisting of a **Baghouse ('C')** with 100% capture and a maximum volume flow rate of **16,600** dry standard cubic feet per minute (dscfm) The volumetric flow rate may be determined by utilizing Method 2 - *Determination of Stack Gas Velocity and Volumetric Flow Rate* as referenced in 40 CFR Part 60, Appendix A.

Stack Height:	201.0 ft
Stack Diameter:	3.281ft
Stack Velocity:	19.71 ft/sec
Stack Temperature:	Ambient
Stack Orientation:	Horizontal or Capped

2. NAC 445B.3405
   Emission Limits
   On and after the date of startup of **S2.012 through S2.014**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of **Baghouse 'C'**, the following pollutants in excess of the following specified limits:
   a. NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **1.423** pounds per hour. This limit is less than the **77.588** pounds per hour combined maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.

   b. NAC 445B.305 – The discharge of PM (particulate matter) to the atmosphere will not exceed **1.423** pound per hour. This limit is less than the **88.559** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by 3.a of this section.

   c. NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** to the atmosphere from the stack of **Baghouse 'C'** will not exceed **0.01** grain per dry standard cubic foot.

   d. SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Baghouse 'C'** stack discharge will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.

   e. NAC 445B.22017 – The opacity from the **Baghouse 'C'** stack discharge will not equal or exceed 20% in accordance with NAC 445B.22017.

Section V. Specific Operating Conditions (continued)

F. Emission Units* S2.012 through S2.014 –*Coal Tripper Deck, Baghouse 'C' Controlled. (continued)

2. NAC 445B.3405 Emission Limits (continued)
   f. New Source Performance Standards - Subpart Y - Standards of Performance for Coal Preparation Plants (40 CFR Part 60.250) On and after the sixtieth day after achieving the maximum production rate at which **S2.012 through S2.014** will be operated, but not later than 180 days after initial startup, Permittee will not discharge or cause the discharge into the atmosphere from **Baghouse 'C'** the following pollutants in excess of the following specified limits:
      (1) Emissions that exhibit greater than 20 percent opacity (40 CFR Part 60.252(c))
      (2) The opacity standard set forth in this part shall apply at all times except during periods of startup, shutdown, and malfunction (40 CFR Part 60.11(c))
      (3) At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate **S2.012 through S2.014** including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions (40 CFR Part 60.11(d))

3. NAC 445B.3405
   Operating Parameters
   a. Maximum allowable throughput for **S2.012 through S2.014** will not exceed **1,000.0** tons of coal per any one-hour period.
   b. **S2.012 through S2.014** may operate **8,760** hours per calendar year.

4. NAC 445B.3405
   a. Monitoring, Testing and Record keeping
      Upon commencement of operations, ***Permittee will***:
      (1) Monitor and record the throughput rate of coal to **S2.012 through S2.014** on a daily basis.

      (2) Monitor and record the hours of operation of **S2.012 through S2.014** on a daily basis.

      (3) Conduct and record a weekly visible emission inspection on the exhaust stack **of Baghouse 'C'** while **System 06** is operating; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

      (4) Monitor and record that the maintenance and operation of **Baghouse 'C'** is in accordance with the manufacturer's operation and maintenance guidelines, on a weekly basis. Monitor and record on a weekly basis the differential pressure drop across the **Baghouse 'C'**. Weekly records must show that observations were made, and records of any corrective actions taken.

      (5) Conduct and record a Method 5 and Method 201 or 201A (or an equivalent method as approved by the Director) performance test for PM and PM_{10} on the exhaust stack of **Baghouse 'C'** consisting of three valid runs within 60 days, but no later than 180 days, from the date of initial startup. The Method 201 or 201A emissions tests must be conducted in accordance with 40 CFR Part 51, Appendix M, Method 201 or 201A. The Method 5 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A, Method 5.

   b. New Source Performance Standards (NSPS) - Notification and Record Keeping (40 CFR Part 60.7(b))
      Permittee, upon the issuance date of this permit shall:
      (1) Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

Section V. Specific Operating Conditions (continued)

G. Emission Units* S2.015 and PF1.016 – *Fly Ash Handling Silo.

System 07	***Fly Ash Handling Silo***
S2.015	***Fly Ash/Flue Gas Desulfurization (FGD) Waste Handling Silo Loading***
PF1.016	***Fly Ash/FGD Waste Handling Silo Discharge to Truck [Complete Wet Process]***

1. NAC 445B.3405
   Air Pollution Control Equipment
   Emissions from **S2.015** shall be ducted to a control system consisting of a **Bin Vent Filter** with a 100% capture rate.
   Emissions from **PF1.016** shall be controlled by Fly Ash/FGD being mixed with water until completely wet.

2. NAC 445B.3405
   Emission Limits
   a. On and after the date of startup of **S2.015**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of the **Fly Ash Bin Vent Filter**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.598** pound per hour or more than **2.617** tons per year. This limit is less than the **66.314** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by paragraph G.3.a of this section.

      (2) NAC 445B.305 – The discharge of PM (particulate matter) to the atmosphere will not exceed **0.598** pound per hour or more than **2.617** tons per year. This limit is less than the **66.314** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by paragraph G.3.a of this section.

      (3) NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** to the atmosphere from the stack of the **Fly Ash Bin Vent Filter** will not exceed **0.02** grain per dry standard cubic foot.

      (4) SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Fly Ash Bin Vent Filter** stack discharge will not equal or exceed **20%** for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.

      (5) NAC 445B.22017 – The opacity from the **Fly Ash Bin Vent Filter** stack discharge will not equal or exceed 20**%** in accordance with NAC 445B.22017.

   b. On and after the date of startup of **PF1.016**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from **PF1.016**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of PM_{10} to the atmosphere will not exceed **0.000** pound per hour or more than **0.000** tons per year. This limit is less than the **66.314** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by paragraph G.3.b. of this section.
      (2) NAC 445B.305 – The discharge of PM to the atmosphere will not exceed **0.000** pound per hour or more than **0.000** tons per year. This limit is less than the **66.314** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by paragraph G.3.b of this section.
      (3) SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Fly Ash/FGD Silo** discharge will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from the **Fly Ash/FGD Silo** discharge will not equal or exceed 20% in accordance with NAC 445B.22017.
      (5) NAC 445B.305 – The opacity from the **Fly Ash/FGD Silo** discharge will not equal or exceed 0.0%.

Section V. Specific Operating Conditions (continued)

G. Emission Units* S2.015 and PF1.016 – *Fly Ash Handling Silo. (continued)

3. NAC 445B.3405

   Operating Parameters

   a. The maximum allowable throughput for **S2.015** will not exceed **400.0** tons of Fly Ash/FGD Waste per any one-hour period.
   b. The maximum allowable throughput for **PF1.016** will not exceed **400.0** tons of Fly Ash/FGD Waste per any one-hour period.
   c. **S2.015 and PF1.016** may operate **8,760** hours per calendar year, each.
   d. Total annual throughput for **S2.015 and PF1.016** will not exceed **109,000.0** tons of Fly Ash/FGD Waste per calendar year, each.

4. NAC 445B.3405

   a. Monitoring, Recordkeeping and Compliance

      Permittee will:

      (1) Monitor and record the amount of Fly Ash/FGD Waste loaded into **S2.015** each day loading occurs.
      (2) Monitor and record the amount of Fly Ash/FGD Waste discharged from **PF1.016** each day discharge occurs.
      (3) Conduct a weekly inspection of the **Fly Ash Bin Vent Filter** on **S2.015** in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the bags and housing) and any corrective actions taken.
      (4) Conduct and record a visible emission inspection once per month on the exhaust points of **S2.015 and PF1.016** each; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

Section V. Specific Operating Conditions (continued)

H. Emission Units* PF1.017 and PF1.018 – *Bottom Ash Stackout.

System 08	***Bottom Ash Stackout***
PF1.017	***Bottom Ash Transfer to Containment Area [Complete Wet Process]***
PF1.018	***Front End Loader transfer to Haul Truck***

1. NAC 445B.3405
   Air Pollution Equipment
   a. Emissions from **PF1.017** shall be controlled by the Bottom Ash being saturated by water**.**
   b. Emissions from **PF1.018** shall be controlled by water sprays.

2. NAC 445B.3405
   Emission Limits
   On and after the date of startup of **PF1.017 and PF1.018**, Permittee will not discharge or cause the discharge into the atmosphere from **PF1.017 and PF1.018**, the following pollutants in excess of the following specified limits:

   a. Bottom Ash Transfer to Containment Area
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.017** will not exceed **0.010** pound per hour, or exceed **0.002** ton per year. This limit is less than the **34.085** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.017** will not exceed **0.010** pound per hour, or exceed **0.002** ton per year. This limit is less than the **34.085** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.017** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.017** will not equal or exceed 20% in accordance with NAC 445B.22017.

   b. Front Loader transfer to Haul Truck
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.018** will not exceed **0.020** pound per hour, or exceed **0.003** ton per year. This limit is less than the **66.314** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.018** will not exceed **0.020** pound per hour, or exceed **0.003** ton per year. This limit is less than the **66.314** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.018** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.018** will not equal or exceed 20% in accordance with NAC 445B.22017.

Section V. Specific Operating Conditions (continued)

H. Emission Units* PF1.017 and PF1.018 – *Bottom Ash Stackout. (continued)

3. NAC 445B.3405

   Operating Parameters

   a. Maximum allowable throughput for **PF1.017** will not exceed **15.0** tons of Bottom Ash per any one-hour period.
   b. Maximum allowable throughput for **PF1.018** will not exceed **400.0** tons of Bottom Ash per any one hour period.
   b. Maximum allowable throughput for **System 08** will not exceed **109,000.0** tons of Bottom Ash per 12-month rolling period.
   d. **PF1.017 and PF1.018** may operate 8,760 hours per year.

4. NAC 445B.3405

   a. Monitoring and Recordkeeping

      Upon commencement of operations, ***Permittee will***:

      (1) Monitor and record the weight transfer rate of Bottom Ash for **PF1.017 and PF1.018**, each, on a daily basis.

      (2) Monitor and record the hours of operation of **PF1.017 and PF1.018** on a daily basis.

      (3) Conduct and record a weekly visible emission inspection on **PF1.017 - PF1.018** while **System 08** is operating; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

Section V. Specific Operating Conditions (continued)

I. Emission Units* S2.016 and S2.017 – *Recycle Ash Handling Silos.

System 09	***Recycle Ash Handling Silos***
S2.016	***Recycle Ash Silo 1A Loading***
S2.017	***Recycle Ash Silo 1B Loading***

1. NAC 445B.3405
   Air Pollution Control Equipment
   Emissions from **S2.016** shall be ducted to a control system consisting of a **Bin Vent Filter** with a 100% capture rate.
   Emissions from **S2.017** shall be ducted to a control system consisting of a **Bin Vent Filter** with a 100% capture rate.
   Emissions from unloading the **Recycle Ash Silos** are controlled by the main boiler, **S2.001**.

2. NAC 445B.3405
   Emission Limits
   a. On and after the date of startup of **S2.016**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of the **Recycle Ash 1A Bin Vent Filter**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.569** pound per hour or more than **2.493** tons per year. This limit is less than the **46.290** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by paragraph I.3.a of this section.

      (2) NAC 445B.305 – The discharge of PM (particulate matter) to the atmosphere will not exceed **0.569** pound per hour or more than **2.493** tons per year. This limit is less than the **46.290** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by paragraph I.3.a of this section.

      (3) NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** to the atmosphere from the stack of the **Recycle Ash 1A Bin Vent Filter** will not exceed **0.02** grain per dry standard cubic foot.

      (4) SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Recycle Ash 1A Bin Vent Filter** stack discharge will not equal or exceed **20%** for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.

      (5) NAC 445B.22017 – The opacity from the **Recycle Ash 1A Bin Vent Filter** stack discharge will not equal or exceed **20%** in accordance with NAC 445B.22017.

   b. On and after the date of startup of **S2.017**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of the **Recycle Ash 1B Bin Vent Filter**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.569** pound per hour or more than **2.493** tons per year. This limit is less than the **46.290** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by paragraph I.3.a of this section.

      (2) NAC 445B.305 – The discharge of PM (particulate matter) to the atmosphere will not exceed **0.569** pound per hour or more than **2.493** tons per year. This limit is less than the **46.290** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by paragraph I.3.a of this section.

Section V. Specific Operating Conditions (continued)

I. Emission Units* S2.016 and S2.017 – *Recycle Ash Handling Silos. (continued)

2. NAC 445B.3405 Emission Limits (continued)
   b. On and after the date of startup of **S2.017**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of the **Recycle Ash 1B Bin Vent Filter**, the following pollutants in excess of the following specified limits: (continued)
      (3) NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** to the atmosphere from the stack of the **Recycle Ash 1B Bin Vent Filter** will not exceed **0.02** grain per dry standard cubic foot.

      (4) SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Recycle Ash 1B Bin Vent Filter** stack discharge will not equal or exceed **20%** for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.

      (5) NAC 445B.22017 – The opacity from the **Recycle Ash 1B Bin Vent Filter** stack discharge will not equal or exceed **20%** in accordance with NAC 445B.22017.

3. NAC 445B.3405
   Operating Parameters
   a. The maximum allowable loading rate for **S2.016 and S2.017**, each will not exceed **60.0** tons of Recycle Ash per any one-hour period.
   b. The maximum allowable unloading rate for **S2.016 and S2.017**, each will not exceed **25.0** tons of Recycle Ash per any one-hour period.
   c. **S2.016 and S2.017** may operate **8,760** hours per calendar year, each.
   d. Total annual throughput for **S2.016 and S2.017**, each will not exceed **219,000.0** tons of Recycle Ash per calendar year.

4. NAC 445B.3405
   a. Monitoring, Recordkeeping and Compliance
      Permittee will:
      (1) Monitor and record the amount of Recycle Ash loaded into **S2.016 and S2.017** each day loading occurs.
      (2) Monitor and record the amount of Recycle Ash discharged from **S2.016 and S2.017** each day discharge occurs.
      (3) Conduct a weekly inspection of the **Recycle Ash 1A and 1B Bin Vent Filters** on **S2.016 and S2.017** in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the bags and housing) and any corrective actions taken.
      (4) Conduct and record a visible emission inspection once per month on the exhaust points of **S2.016 – S2.017** each; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

Section V. Specific Operating Conditions (continued)

J. Emission Units* S2.018 and S2.019 – *Lime Handling Silos.

System 10	***Lime Handling Silos***
S2.018	***Lime Silo 1A Loading***
S2.019	***Lime Silo 1B Loading***

1. NAC 445B.3405
   Air Pollution Control Equipment
   Emissions from **S2.018** shall be ducted to a control system consisting of a **Bin Vent Filter** with a 100% capture rate.
   Emissions from **S2.019** shall be ducted to a control system consisting of a **Bin Vent Filter** with a 100% capture rate.
   Emissions from unloading the **Lime Silos** are controlled by the main boiler, **S2.001**.

2. NAC 445B.3405
   Emission Limits
   a. On and after the date of startup of **S2.018**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of the **Lime 1A Bin Vent Filter**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.135** pound per hour or more than **0.592** ton per year. This limit is less than the **34.085** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by paragraph J.3.a of this section.

      (2) NAC 445B.305 – The discharge of PM (particulate matter) to the atmosphere will not exceed **0.135** pound per hour or more than **0.592** ton per year. This limit is less than the **34.085** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by paragraph J.3.a of this section.

      (3) NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** to the atmosphere from the stack of the **Lime 1A Bin Vent Filter** will not exceed **0.02** grain per dry standard cubic foot.

      (4) SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Lime 1A Bin Vent Filter** stack discharge will not equal or exceed **20%** for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.

      (5) NAC 445B.22017 – The opacity from the **Lime 1A Bin Vent Filter** stack discharge will not equal or exceed **20%** in accordance with NAC 445B.22017.

   b. On and after the date of startup of **S2.019**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of the **Lime 1B Bin Vent Filter**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.135** pound per hour or more than **0.592** ton per year. This limit is less than the **34.085** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by paragraph J.3.a of this section.

      (2) NAC 445B.305 – The discharge of PM (particulate matter) to the atmosphere will not exceed **0.135** pound per hour or more than **0.592** ton per year. This limit is less than the **34.085** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by paragraph J.3.a of this section.

Section V. Specific Operating Conditions (continued)

J. Emission Units* S2.018 and S2.019 – *Lime Handling Silos. (continued)

2. NAC 445B.3405 Emission Limits (continued)
   b. On and after the date of startup of **S2.019**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of the **Lime 1B Bin Vent Filter**, the following pollutants in excess of the following specified limits: (continued)
      (3) NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** to the atmosphere from the stack of the **Lime 1B Bin Vent Filter** will not exceed **0.02** grain per dry standard cubic foot.

      (4) SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Lime 1B Bin Vent Filter** stack discharge will not equal or exceed **20%** for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.

      (5) NAC 445B.22017 – The opacity from the **Lime 1B Bin Vent Filter** stack discharge will not equal or exceed **20%** in accordance with NAC 445B.22017.

3. NAC 445B.3405
   Operating Parameters
   a. The maximum allowable loading rate for **S2.018 and S2.019**, each will not exceed **15.0** tons of Lime per any one-hour period.
   b. The maximum allowable unloading rate for **S2.018 and S2.019**, each will not exceed **1.5** tons of Lime per any one-hour period.
   c. **S2.018 and S2.019** may operate **8,760** hours per calendar year, each.
   d. Total annual throughput for **S2.018 and S2.019**, each will not exceed **13,140.0** tons of Lime per calendar year.

4. NAC 445B.3405
   a. Monitoring, Recordkeeping and Compliance
      Permittee will:
      (1) Monitor and record the amount of Lime loaded into **S2.018 and S2.019** each day loading occurs.
      (2) Monitor and record the amount of Lime discharged from **S2.018 and S2.019** each day discharge occurs.
      (3) Conduct a weekly inspection of the **Lime 1A and 1B Bin Vent Filters** on **S2.018 and S2.019** in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the bags and housing) and any corrective actions taken.
         (4) Conduct and record a visible emission inspection once per month on the exhaust points of **S2.018 and S2.019** each; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

Section V. Specific Operating Conditions (continued)

K. Emission Units* S2.020 – *Carbon Handling Silos.

System 11	***Activated Carbon Handling Silos***
S2.020	***Activated Carbon Silo Loading***

1. NAC 445B.3405
   Air Pollution Control Equipment
   Emissions from **S2.020** shall be ducted to a control system consisting of a **Bin Vent Filter** with a 100% capture rate. Emissions from unloading the **Carbon Silos** are controlled by the main boiler, **S2.001**.

2. NAC 445B.3405
   Emission Limits
   a. On and after the date of startup of **S2.020**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the exhaust stack of the **Carbon Bin Vent Filter**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.085** pound per hour or more than **0.374** ton per year. This limit is less than the **34.085** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by paragraph K.3.a of this section.

      (2) NAC 445B.305 – The discharge of PM (particulate matter) to the atmosphere will not exceed **0.085** pound per hour or more than **0.374** ton per year. This limit is less than the **34.085** pounds per hour maximum allowable emission limit as determined from SIP 445.732 and the maximum allowable throughput as limited by paragraph K.3.a of this section.

      (3) NAC 445B.305 *BACT Emission Limit* – The discharge of **PM_{10}** to the atmosphere from the stack of the **Carbon Bin Vent Filter** will not exceed **0.02** grain per dry standard cubic foot.

      (4) SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from the **Carbon Bin Vent Filter** stack discharge will not equal or exceed **20%** for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.

      (5) NAC 445B.22017 – The opacity from the **Carbon Bin Vent Filter** stack discharge will not equal or exceed **20%** in accordance with NAC 445B.22017.

3. NAC 445B.3405
   Operating Parameters
   a. The maximum allowable loading rate for **S2.020** will not exceed **15.0** tons of Activated Carbon per any one-hour period.
   b. The maximum allowable unloading rate for **S2.020** will not exceed **0.175** tons of Activated Carbon per any one-hour period.
   c. **S2.020** may operate **8,760** hours per calendar year.
   d. Total annual throughput for **S2.020** will not exceed **1,533.0** tons of Activated Carbon per calendar year.

Section V. Specific Operating Conditions (continued)

K. Emission Units* S2.020 – *Carbon Handling Silos. (continued)

4. NAC 445B.3405
   a. Monitoring, Recordkeeping and Compliance

      Permittee will:

      (1) Monitor and record the amount of Activated Carbon loaded into **S2.020** each day loading occurs.
      (2) Monitor and record the amount of Activated Carbon discharged from **S2.020** each day discharge occurs.
      (3) Conduct a weekly inspection of the **Carbon Bin Vent Filter** on **S2.020** in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the bags and housing) and any corrective actions taken.
      (4) Conduct and record a visible emission inspection once per month on the exhaust point of **S2.020**; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

Section V. Specific Operating Conditions (continued)

L. Emission Unit* PF1.019 – *Ash Disposal.

System 12 Ash Disposal

PF1.019 Fly Ash/Bottom Ash Haul Truck transfer to Waste Disposal Site

1. NAC 445B.3405
   Air Pollution Equipment
   Emissions from **PF1.019** shall be controlled by water sprays.

2. NAC 445B.3405
   Emission Limits
   On and after the date of startup of **PF1.019**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from **PF1.019**, the following pollutants in excess of the following specified limits:

   a. Fly Ash/Bottom Ash Transfer to Waste Disposal Site
      (1) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from **PF1.019** will not exceed **0.026** pound per hour, or exceed **0.002** ton per year. This limit is less than the **50.003** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (2) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.019** will not exceed **0.026** pound per hour, or exceed **0.002** ton per year. This limit is less than the **50.003** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.
      (3) SIP 445.721 *Federally Enforceable SIP Requirement* – The opacity from **PF1.019** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (4) NAC 445B.22017 – The opacity from **PF1.019** will not equal or exceed 20% in accordance with NAC 445B.22017.

3. NAC 445B.3405
   Operating Parameters
   a. Maximum allowable dump rate for **PF1.019** will not exceed **88.0** tons of Fly Ash/Bottom Ash per any one-hour period.
   b. Maximum allowable dump rate for **PF1.019** will not exceed **109,000.0** tons of Fly Ash/Bottom Ash per 12-month rolling period.
   c. **PF1.019** may operate 8,760 hours per year.

4. NAC 445B.3405
   a. Monitoring and Recordkeeping
      Upon commencement of operations, ***the Permittee*** will:
      (1) Monitor and record the weight transfer rate of Fly Ash/Bottom Ash for **PF1.019** on a daily basis.

      (2) Monitor and record the hours of operation of **PF1.019** on a daily basis.

      (3) Conduct and record a weekly visible emission inspection on **PF1.0019** while **System 12** is operating; record the time of the survey and indicate whether any visible emissions were observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test will be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

Section V. Specific Operating Conditions (continued)

M. Emission Unit S2.021 – Cooling Tower

System 13 Cooling Tower

S2.005 Seven Cell Cooling Tower, *Model TBD, Serial# TBD, 96,500 gallon/min Circulating Water Flow Rate*

1. NAC 445B.3405
   Air Pollution Equipment
   Emissions from **S2.021** will be controlled by drift eliminators.

Stack Height:	45 ft
Stack Diameter:	31.6 ft
Stack Velocity:	29.6 ft/sec
Stack Temperature:	Ambient
Gas Volume Flow rate:	9,744,000 ACFM

2. NAC 445B.3405
   Emission Limits
   a. On and after the date of startup of **S2.021**, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from the cooling tower stacks of **S2.021** the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from **S2.021** will not exceed **1.450** pounds per hour. This limit is less than the **126.92** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum combined allowable throughput as limited by 3.a of this section.

      (2) SIP 445.732 *Federally Enforceable SIP* – The discharge of PM (particulate matter) to the atmosphere from **S2.021** will not exceed **126.92** pounds per hour.

      (3) NAC 445B.22017 – The opacity from of **S2.021** will not equal or exceed 20%. The opacity must be determined as set forth in 445B.22017.1(a) or (b).

      (4) SIP 445.721 *Federally Enforceable SIP* - The opacity from **S2.021** will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour.

      (5) NAC 445B.305 *BACT Emission Limit* – The discharge of drift from **S2.021** will not exceed **0.0005** percent of circulating cooling water flow rate.

3. NAC 445B.3405
   Operating Parameters
   a. The maximum circulating water flow rate for **S2.021** will not exceed **96,500** gallons per minute (**24,160** tons per hour).
   b. The maximum Total Dissolved Solids (TDS) content for **S2.021** will not exceed **6,000** milligrams per liter (**6,000** ppmw).
   c. The use of chromium-based water treatment chemicals is prohibited.
   d. **S2.021** may operate 8,760 hours per year.

Section V. Specific Operating Conditions (continued)

M. Emission Unit S2.021 – Cooling Tower (continued)

4. NAC 445B.3405

Monitoring, Record keeping and Compliance

The Permittee will maintain a contemporaneous log containing at a minimum, the following record keeping for each day, or part of a day that **S2.021** are operated:

a. **Monitoring**

The Permittee, upon the issuance date of this operating permit will:

(1) Sample the cooling tower water from **S2.021** on a calendar quarterly basis for the TDS concentration in parts per million (ppm). The TDS will be determined using EPA Method 160.1 DNS.

(2) Inspect and record in a contemporaneous log the maintenance and operation of the drift eliminators in S2.021 in accord with manufacturer's guidelines on an annual basis.

b. **Recordkeeping**

The Permittee will maintain a contemporaneous log containing at a minimum, the following recordkeeping for each day, or part of a day that **S2.021** are operating under this operating scenario:

(1) The TDS value of the circulating water of **S2.021** on a calendar quarterly basis. The TDS value will be based on the sampling required in M.4.a. of this section.

(2) The volume flow rate of the circulating water of **S2.021** on an hourly basis.

(3) The total hourly quantities of water circulated for each hour of each day **S2.021** operates.

(4) The total daily hours of operation of **S2.021** for the corresponding date.

(5) Maintain manufacturer's guidelines for maintenance and inspection of the drift eliminators on site. Maintain annual inspection records including records of observations and any corrective actions taken.

Section V. Specific Operating Conditions (continued)

N. Emission Units* S2.022 and S2.023 – *Fuel Storage

System 14	***Fuel Storage***
S2.022	***1,504,000 Gallon No. 2 Fuel Oil Storage Tank***
S2.023	***50,000 Gallon No. 2 Fuel Oil Storage Tank***

1. NAC 445B.3405
   Air Pollution Equipment
   Control system consisting of submerged fill.

S2.022 Tank Dimensions		**S2.023** Tank Dimensions	
Tank Height:	40.0 ft	Tank Height:	13.0 ft
Tank Diameter:	80.0 ft	Tank Diameter:	26.0 ft

2. NAC 445B.3405
   Emission Limits
   On and after the date of startup of ***S2.022 and S2.023***, ***the Permittee*** will not discharge or cause the discharge into the atmosphere from ***S2.022 and S2.023***, the following pollutants in excess of the following specified limits:
   a. NAC 445B.305
      (1) The discharge of **VOC** to the atmosphere from **S2.022** will not exceed **1,188.0** pounds per 12-month rolling period.
      (2) The discharge of **VOC** to the atmosphere from **S2.023** will not exceed **34.2** pounds per 12-month rolling period.
   b. SIP 445.721 *(Federally Enforceable SIP Requirement)* – The opacity from **S2.022 and S2.023** will not equal or exceed **20%** for a period or periods aggregating more than 3 minutes in any one-hour period.
   c. NAC 445B.22017 – The opacity from **S2.022 and S2.023** will not equal or exceed **20%**. The opacity must be determined as set forth in 445B.22017.1(a) or (b).

3. NAC 445B.3405
   Operating Parameters
   a. **S2.022 and S2.023** may store No. 2 distillate fuel oil only.
   b. The maximum throughput will not exceed:
      (1) **95,484,000** gallons per calendar year for **S2.022**.
      (2) **953,200** gallons per calendar year for **S2.023**.
   c. **S2.022 and S2.023** may operate **8,760** hours per year.

4. NAC 445B.3405
   a. Monitoring, Record keeping and Compliance
      Upon commencement of operations, ***the Permittee*** will Monitor and record in a contemporaneous log, the total fuel oil throughput for **S2.022 and S2.023** on a monthly basis for the calendar year.

   b. New Source Performance Standards (NSPS) – 40 CFR Part 60, Subpart Kb
      Upon commencement of operations, ***the Permittee*** will within 60 days after achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days of initial startup:
      (1) Pursuant to 40 CFR Part 60, Subpart Kb, Section 60.116b (a) and (b), maintain readily accessible records showing dimensions of the storage vessels **S2.022 and S2.023** and an analysis showing the capacity of the storage vessels **S2.022 and S2.023**. This record shall be kept for the life of the source.

Section V. Specific Operating Conditions (continued)

O. Emission Unit* S2.024 – *Diesel Firewater Pump

System 15	***Diesel Firewater Pump***
S2.024	***Detroit Diesel Firewater Pump Engine, Model JU6H-UF30, Serial TBD, 160 HP Output***

1. NAC 445B.3405
   Air Pollution Equipment
   Emissions from **S2.024** are uncontrolled.

2. NAC 445B.3405
   Emission Limits
   a. On and after the date of startup of **S2.024**, Permittee will not discharge or cause the discharge into the atmosphere from the stack discharges of **S2.024**, the following pollutants in excess of the following specified limits:
      (1) NAC 445B.305 – The discharge of **PM_{10}** (particulate matter less than 10 microns in diameter) to the atmosphere from the stack discharge of **S2.024** will not exceed **0.035** pound per hour or exceed **0.002** ton per year.
      (2) NAC 445B.305 – The discharge of **PM** (particulate matter) to the atmosphere from the stack discharge **S2.024** will not exceed **0.035** pound per hour or exceed **0.002** ton per year.
      (3) NAC 445B.305 – The discharge of **SO_2** (sulfur dioxide) to the atmosphere from the stack discharge of **S2.024** will not exceed **0.074** pound per hour or exceed **0.004** ton per year.
      (4) NAC 445B.305 – The discharge of **NO_x** (nitrogen oxides) to the atmosphere from the stack discharge of **S2.024** will not exceed **1.764** pounds per hour or exceed **0.088** ton per year.
      (5) NAC 445B.305 – The discharge of **CO** (carbon monoxide) to the atmosphere from the stack discharge of **S2.024** will not exceed **0.145** pound per hour or exceed **0.007** ton per year.
      (6) NAC 445B.305 – The discharge of **VOC** (volatile organic compounds) to the atmosphere from the stack discharge of **S2.024** will not exceed **0.106** pound per hour or exceed **0.005** ton per year.
      (7) SIP 445.721 *Federally Enforceable SIP* – The opacity from the **S2.024** stack discharge will not equal or exceed 20% for a period or periods aggregating more than 3 minutes in any one hour in accordance with SIP 445.721.
      (8) NAC 445B.22017 – The opacity from the **S2.024** stack discharge will not equal or exceed 20% in accordance with NAC 445B.22017.

3. NAC 445B.3405
   Operating Parameters
   a. **S2.024** may combust #2 Diesel Fuel Oil only.
   b. **S2.024** may not combust more than **10.7** gallons #2 Diesel Fuel Oil per hour.
   c. The sulfur content of the #2 diesel combusted in **S2.024** will not exceed **0.05%** by weight.
   d. **S2.024** may not operate on a routine basis in excess of **100** hours per calendar year. If additional firing is required for emergency fire protection, ***the Permittee*** will document the emergency and handle the operation as excess emissions as required by Section III.B.4.

Section V. Specific Operating Conditions (continued)

O. Emission Unit* S2.024 – *Diesel Firewater Pump

4. NAC 445B.3405

Monitoring, Record keeping and Compliance

a. Upon commencement of operation, ***the Permittee*** will:

(1) Monitor and record the total daily hours of operation of **S2.024** each day of operation.

(2) Monitor and record the total daily fuel consumption for **S2.024** each day of operation.

(3) Record average hourly fuel consumption for **S2.024** each day of operation. The average will be determined using the total hours of operation and total daily fuel consumption in O.4.a.(1) and O.4.a.(2) of this section.

(4) Conduct and record a Method 9 visible emissions test on the stack discharges of **S2.024** while the pump engine is operating, on an annual basis. The Method 9 visible emissions test must be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.

(5) Conduct and record a Method 5 and Method 201A/202 emission test for PM and PM_{10}, a Method 6, 7, 10 and 24 for SO_2, NO_x, CO and VOC's (or equivalent EPA reference method approved in advance by the Director) on the exhaust stacks of **S2.024** consisting of three valid runs within 180 days from the date of initial startup. The Method 201A/202 emissions tests must be conducted in accordance with 40 CFR Part 51, Appendix M, Method 201A and 202. The Method 5, 6, 7, 10 and 24 emissions test must be conducted in accordance with 40 CFR Part 60, Appendix A.

**************End of Specific Operating Conditions***************

NO. AP4911-1349

CLASS I AIR QUALITY OPERATING PERMIT TO CONSTRUCT

Issued to: NEWMONT NEVADA ENERGY INVESTMENT, LLC, as Permittee

Section VI. Emission Caps

A. No Emission Caps Defined.

**************End of Emission Caps***************

CLASS I AIR QUALITY
OPERATING PERMIT TO CONSTRUCT

Issued to: NEWMONT NEVADA ENERGY INVESTMENT, LLC, as Permittee

Section VII. Surface Area Disturbance Conditions

A. NAC 445B.22037
Fugitive Dust

1. ***The Permittee*** may not cause or permit the handling, transporting, or storing of any material in a manner that allows or may allow controllable particulate matter to become airborne.
2. Except as otherwise provided in subsection 4, ***the Permittee*** may not cause or permit the construction, repair, demolition, or use of unpaved or untreated areas without first putting into effect an ongoing program using the best practical methods to prevent particulate matter from becoming airborne. As used in this subsection, "best practical methods" includes, but is not limited to, paving, chemical stabilization, watering, phased construction, and re-vegetation.
3. Except as provided in subsection 4, ***the Permittee*** may not disturb or cover 5 acres or more of land or its topsoil until ***the Permittee*** has obtained an Operating Permit for surface area disturbance to clear, excavate, or level the land or to deposit any foreign material to fill or cover the land.
4. The provisions of subsections 2 and 3 do not apply to:
   a. Agricultural activities occurring on agricultural land; or
   b. Surface disturbances authorized by a permit issued pursuant to NRS 519A.180 which occur on land which is not less than 5 acres or more than 20 acres.

B. NAC 445B.305 *Federally Enforceable PSD Permit Requirement*
Fugitive Dust Air Pollution Control Equipment

1. ***The Permittee*** shall install and continuously operate and maintain the following air pollution controls:
   a. Facility Roads - All facility, haul roads and roads to the plant shall be paved and haul roads shall be washed as necessary.
   b. Active Coal Storage Piles - All active coal storage piles shall be controlled with a chemical dust suppression agent.
   d. Inactive Coal Storage Piles - All inactive coal storage piles shall be controlled by chemical binding agent.

**************End of Surface Area Disturbance Conditions ***************

STATE OF NEVADA
BUREAU OF AIR POLLUTION CONTROL

NO. AP4911-1349

CLASS I AIR QUALITY OPERATING PERMIT TO CONSTRUCT

Issued to: NEWMONT NEVADA ENERGY INVESTMENT, LLC, as Permittee

Section VIII. Amendments

NA

This Permit to construct:

1. **Is non-transferable. (NAC 445B.287)**
2. **Will be posted conspicuously at or near the stationary source. (NAC 445B.318)**
3. **Will expire if construction is not commenced within 18 months after the date of issuance or if construction of the facility is delayed for 18 months after initiated. (NAC 445B.3366)**
4. **Will expire if a complete application for a Class I operating permit or modification of an existing Class I operating permit is not submitted within 12 months after the initial start-up. (NAC 445B.3366)**
5. **Any party aggrieved by the Department's decision to issue this permit may appeal to:**
   a) **The State Environmental Commission (SEC) within ten days after the date of notice of the Department's action. (NRS 445B.340)**
   b) **The United States Environmental Protection Agency's Environmental Appeals Board (EAB). The provisions in 40 CFR 124.19 shall apply to appeals made to the EAB for this PSD Operating Permit to Construct.**
6. ***The Permittee* shall submit a complete Class I application within 12 months after the notification date of commencement of operation as required in this permit to construct. (NAC 445B.3361)**
7. **The effective date of the permit is 30 days after service of notice to the applicant and commenters of the final decision to issue, modify, or revoke and reissue the permit, unless review is requested on the permit under 40 CFR 124.19 within the 30 day period.**
8. **If an appeal is made to the EAB, the effective date of the permit is suspended until such time as the appeal is resolved.**

Signature *Original Signed by*

Issued by: Michael Elges
Bureau Chief
Bureau of Air Pollution Control

Phone: (775) 687-9349 Date: May 5, 2005

Class I Non-Permit Equipment List

Appended to Newmont Nevada Energy Investment, LLC, #AP4911-1349

Emission Unit #	Emission Unit Description
IA1.001	Emergency Generator, 1,810 HP, based on 500 hrs/yr, NAC 445B.288(2)(h)
	1,000 Gallon No. 2 Fuel Oil Storage Tank, NAC 445B.288(2)(d)
IA1.002	1,000 Gallon No. 2 Fuel Oil Storage Tank, NAC 445B.288(2)(d)
IA1.003	1,000 Gallon Lube/Motor Oil Storage Tank, NAC 445B.288(2)(d)
IA1.004	1,000 Gallon Used Oil Storage Tank, NAC 445B.288(2)(d)
IA1.005	Safety Kleen (or equivalent) parts cleaner (non-halogenated, cold solvent), Approved
IA1.006	Pursuant to NAC 445B.288(4), March 01, 1996, Insignificant Activity List

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT of ENVIRONMENTAL PROTECTION

Division of Air Quality
Bureau of Air Permits
401 E. State Street, 2nd floor, P.O. Box 420, Mail Code 401-02
Trenton, NJ 08625-0420

BOB MARTIN
Commissioner

Air Pollution Control Operating Permit
Significant Modification and Preconstruction Approval

Permit Activity Number: BOP100001 **Program Interest Number: 18058**

Mailing Address	Plant Location
Kevin Mc Mahon Operations Manager CHEVRON PRODUCTS CO 1200 STATE ST Perth Amboy, NJ 08861	CHEVRON PRODUCTS CO Chevron Products Company Perth Amboy City Middlesex County

Initial Operating Permit Approval Date: February 4, 2005
Significant Modification Approval Date: March 4, 2011
Operating Permit Expiration Date: February 3, 2015

This significant modification is approved and issued under the authority of Chapter 106, P.L. 1967 (N.J.S.A. 26:2C-9.2). The equipment at the facility must be operated in accordance with the requirements of this permit.

This approval, in response to your application, merges the provisions of the previously approved operating permit and the changes from this significant modification into a single comprehensive permit that replaces the one previously issued. This significant modification allows the following changes to the facility's current operating permit: A federally enforceable permit limitation is added to U15 to limit the annual fuel firing allowable on the crude furnaces, F-501 Atmospheric Crude Furnace and F-510 Vacuum Crude Furnace. There is a corresponding reduction of all pollutant emission limits from the two units. The NOx emissions will be reduced to below the BART eligibility trigger of 250 tpy.

Equipment at the facility referenced by this significant modification **is covered by** the permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. However, this permit shield does not cover physical changes which were undertaken at the facility after March 3, 2003 and for which the facility did not seek an applicability determination for the Prevention of Significant Deterioration rule, codified at 40 CFR 52.21 (PSD), from the United States Environmental Protection Agency (USEPA). The issuance of this permit should not in any way be construed as a determination by the Department that the PSD rules do not apply. Any questions on applicability of PSD should be directed to USEPA Region II, Air Programs Branch, 21st Floor, 290 Broadway, New York, NY 10007-1866 (Phone: 212-637-4074). Pursuant to N.J.A.C. 7:27-22.33(e), this significant modification consists of both a preconstruction approval and operating permit approval. This operating permit contains compliance schedules as part of the approved compliance plan.

The permittee shall submit to the Department and to the EPA a periodic compliance certification, in accordance with N.J.A.C. 7:27-22.19. The certification shall be submitted electronically through the NJDEP online web portal – Periodic Compliance Certification service, and shall be certified pursuant to N.J.A.C. 7:27-1.39 by the responsible official. Access to DEP Online shall be obtained by following the instructions at: http://www.state.nj.us/dep/online/. The certification should be printed for submission to EPA. The schedule for compliance certifications set forth in the compliance plan in this operating permit. The annual compliance certification reporting period will cover the calendar year ending December 31. **The annual compliance certification is due to the Department and the EPA within 60 days after the end of each calendar year during which this permit was in effect.** If unable to submit electronically, the certification shall be submitted on forms provided by the Department at: http://www.nj.gov/dep/enforcement/compliancecertsair.htm.

The annual compliance certification report may also be considered as your six month deviation report for the period from July 1 through December 31 which is due by January 30 of each year, as required by paragraph 13 in Section F, *General Provisions and Authorities,* of this permit, if the annual compliance certification is submitted by January 30.

New Jersey Department of Environmental Protection
Air & Environmental Quality Compliance & Enforcement
401 East State Street, P. O. Box 422
Trenton, New Jersey 08625-0422

United States Environmental Protection Agency, Region II
Air Compliance Branch
290 Broadway
New York, New York 10007-1866

New Jersey Department of Environmental Protection
Air and Environmental Quality Compliance & Enforcement
Central Regional Enforcement Office
P.O. Box 407
Trenton, NJ 08625-0407

Your facility's current approved operating permit and any previous versions (e.g. superseded, expired, or terminated) are now available for download in the PDF format at: http://www.nj.gov/dep/aqpp/. After accessing the website, click on "Approved Operating Permits" listed under "Reports" and then type in the Program Interested (PI) Number as instructed on the screen. A RADIUS file for your permit, containing Facility Specific Requirements (Compliance Plan), Inventories, and Compliance Schedules (if needed), can be obtained by contacting your permit writer. Upon importing this information into your personal computer with RADIUS software, you will have up-to-date information in RADIUS format. RADIUS software, instructions, and help are available at the Department's website at www.state.nj.us/dep/aqpp. We also have an Operating Permit Help Line available from 9:00 AM to 4:00 PM daily, where you may speak to someone about any questions you may have. The Operating Permit Help Line number is 609-633-8248.

If, in your judgment, the Department is imposing any unreasonable condition of approval in this permit modification action, you may contest the Department's decision on the modification and request an adjudicatory hearing pursuant to N.J.S.A. 52:14b-1 et seq. and N.J.A.C. 7:27-22.32(a). All requests for an adjudicatory hearing must be received in writing by the Department within 20 calendar days of the date you receive this letter. The request must contain the information requested in N.J.A.C. 7:27-1.32 and the information on the enclosed Administrative Hearing Request Checklist and Tracking Form.

The permittee is responsible for submitting a timely and administratively complete operating permit renewal application. The Operating Permit Renewal Application consists of a RADIUS application and the Application Attachment available in Portable Document Format (PDF) and MS Word format at the Department's website http://www.nj.gov/dep/aqpp/applying.html (check Attachment to the RADIUS Operating Permit Renewal Application). Both the RADIUS application and the Application Attachment, along with any other supporting documents (saved on a CD) must be submitted with a cover letter (paper copy). The application is considered timely if it is received at least 12 months before the expiration date of the operating permit. To be deemed administratively complete, an application for renewal of the operating permit shall include all of the information required by the application form for the renewal and the information required pursuant to N.J.A.C. 7:27-22.30(d). However, consistent with N.J.A.C. 7:27-22.30(c), the permittee is encouraged to submit the renewal application at least 15 months prior to expiration of the operating permit, so that the Department can notify the applicant of any deficiencies in the application. This will allow the permittee to correct any deficiencies, and to better ensure that the application is administratively complete by the renewal deadline. Only applications which are timely and administratively complete will be eligible for coverage by an application shield.

Permittees that are subject to Compliance Assurance Monitoring (CAM), pursuant to 40 CFR 64, shall develop a CAM Plan for modified equipment as well as existing sources. Details of the rule and guidance on how to prepare a plan can be found at EPA's website: www.epa.gov/ttn/emc/cam.html. In addition, CAM Plans must be included as part of the permit renewal application. Permittees that do not submit a CAM Plan may have their modification applications denied, pursuant to N.J.A.C. 7:27-22.3.

If you have any questions regarding this permit approval, please call your permit writer, Harry Baist, at (609) 633-8235.

Approved by:

Yaso Sivaganesh
Bureau of Air Permits

Enclosure
CC: S. Riva, USEPA Region II
[Chief CRO / NRO / SRO] (Signature Page Only)

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U15 Crude Unit - Process Heaters**

Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Conduct a comprehensive stack test for Stack 004 (PT1501) and Stack 005 (PT1502) at least 18 months prior to the expiration date of the approved Operating Permit to demonstrate compliance with the TSP, PM10 (including condensible particulate matter, CPM), NOx and CO emission limits. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. [N.J.A.C. 7:27-22.16(e)]	Monitored by stack emission testing prior to permit renewal Unless otherwise approved in thestack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. For refinery fuel gas combusted during the permit term, the permittee shall conduct a stack emission test on each unit. The test shall be for TSP, PM10 (including condensible particulate matter, CPM), NOx as NO2 and CO. Emission levels of the contaminants tested shall be reported in pounds/hour and pounds/million Btu (HHV) heat input. Emission levels of CO shall also be reported in parts per million by volume on a dry basis (ppmvd) corrected to 7% O2. Heat input (MMBtu/hr, HHV) shall be determined for each stack test. [N.J.A.C. 7:27-22.16(e)]	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. [N.J.A.C. 7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]
~~2~~	~~TSP: Particulate emission limit from the combustion of fuel based on rated heat input of source for each of the furnaces is as follows:~~ ~~<= 25.0 lb/hr for F-501 (E1501)~~ ~~<= 16.5 lb/hr for F-510 (E1502). [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~CO <= 50 ppmvd @ 7% O2 for the two furnaces F-501 (E1501) and F-510 (E1502). [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by continuous emission monitoring system continuously, based on a 1 hour block average Continuous emission monitoring for CO and O2. Continuously when the furnaces are being fired. The monitor shall be ranged as per the approved protocol.~~ ~~. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Data Acquisition System (DAS)/electronic storage. Continuously. [N.J.A.C. 7:27-22.16(e)].~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(e)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~8~~	~~Adjust the combustion process in accordance with N.J.A.C. 7:27-19.16 each calendar year. Record NOx and CO conc. in the flue gas after each adjustment and the O2 conc. at which NOx and CO were measured for F-501 (E1501) and F-510 (E1502). [N.J.A.C. 7:27-19.7(g)3]~~	~~Other: Periodic emission monitoring (portable instrumentation may be used to make these measurements). Annually.[N.J.A.C. 7:27-22.16(e)].~~	~~Other: Manual logging of the following: date of the adjustment and the times at which the adjustment began and ended; the name, title and affiliation of the person who made the adjustment; the NOx conc. in the flue gas, in either ppmv or ppmvd, after each adjustment was made; the CO conc. in the flue gas, in either ppmv or ppmvd after each adjustment was made; and the conc. of O2 at which the NOx and CO conc. are measured. These records shall be maintained onsite for a minimum of five years after last collection. Annually.[N.J.A.C. 7:27-22.16(e)].~~	~~None~~.
9	NOx (Total) <= 0.2 lb/MMBTU for furnace F-501 (E1501) and furnace F-510 (E1502). [N.J.A.C. 7:27-19.7(c)]	NOx (Total): Monitored by stack emission testing prior to permit renewal. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. [N.J.A.C. 7:27-22.16(o)]
10	Maximum Gross Heat Input <= 249.92 MMBTU/hr (HHV) for furnace F-501 (E1501) and <= 107.5 MMBtu/hr for furnace F-510 (E1502). [N.J.A.C. 7:27-22.16(a)]	Other: Fuel burner rated capacity.[N.J.A.C. 7:27-22.16(o)].	None.	None.
11	Furnace F-501 (E1501) and F-510 (E1502) fuels limited to refinery fuel gas, or natural gas. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
12	Annual Btu consumption for the furnaces is as follows: <= 2079.8 billion Btu per any consecutive 365 day period for F-501 (E1501) <= 894.6 billion Btu per any consecutive 365 day period for F-510 (E1502) from BOP100001. [N.J.A.C. 7:27-22.16(a)]	Other: Continuous heat content analyzer and flow rate meter. Continuously.[N.J.A.C. 7:27-22.16(e)].	Other: The Btus consumed by each of the furnaces during each shift will be recorded in a logbook or by Data Acquisition System (DAS)/electronic data storage. The numbers will be tabulated on a daily basis and will be used in calculating and recording the total Btu content of fuel fired per any consecutive 365-day period. Btus per consecutive 365-day period shall be calculated by the sum of Btus consumed during any one day added to the total Btu content of the fuel consumed during the preceeding 364 days. This procedure will begin with the first full month following the final issuance of the Operating Permit. This accounting will not include fuel consumption during months prior to the approval of the Operating Permit.[N.J.A.C. 7:27-22.16(o)].	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~13~~	~~Emission limits specified for furnace F-501 (E1501) and F-510 (E1502) (with the exception of those emission limits listed in Reference Numbers 1, 3, 4, 5 and 8 of this Subject Item) shall not apply during periods of start-up and shutdown as follows: Furnace (F-501 and F-510) start-up is defined as the period from initiation of operation until the furnace (F-501 and F-510) reaches steady-state operation. The duration of exemption from emission limits during start-up shall not exceed 48 hours. Furnace (F-501 and F-510) shut-down is defined as the period beginning with the decrease in fuel firing to below 25% of maximum rated capacity until cessation of operation. The duration of exemption from emission limits during shut-down shall not exceed 24 hours. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by visual determination upon occurrence of event. The permittee shall monitor the date and duration of each startup and shutdown. [N.J.A.C. 7:27-22.16(o)]~~	~~Recordkeeping by manual logging of parameter upon occurrence of event in either a readily accessible logbook or computer memories. The permittee shall record the date and duration of each startup and shutdown along with the name/initials of the person performing the monitoring. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
14	The refinery fuel gas heat content, expressed as Btu/Standard Cubic Feet (SCF), shall be monitored by a continuous heat content analyzer, such as a specific gravity analyzer. The hourly block average of heat input to furnace F-501 (E1501) shall not exceed a maximum heat input of 249.92 MMBtu/hr, and heat input to furnace F-510 (E1502) shall not exceed a maximum heat input of 107.5 MMBtu/hr, calculated by multiplying the fuel gas rate, expressed as SCF of gas consumed, by the fuel gas heat content. For any hour during which the analyzer is not operational, the maximum amount of fuel gas that may be combused in furnace F-501 (E1501) shall not exceed 201,700 SCF/hr. and the maximum amount of fuel gas that may be combusted in furnace F-510 (E1502) shall not exceed 86,758 SCF/hr. [N.J.A.C. 7:27-22.16(e)]	Other: Continuous heat content analyzer and flow rate meter. Continuously. If the continuous heat content analyzer is not operational, then the continuous flow rate meter shall be used to monitor the amount of fuel gas sent to the furnace. Continuously.[N.J.A.C. 7:27-22.16(e)].	Other: Data Acquisition System (DAS)/electronic data storage. Continuously.[N.J.A.C. 7:27-22.16(e)].	None.
~~15~~	~~TSP <= 23.8 tons/yr. Maximum emission limit based on BOP100001. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~16~~	~~PM-10 (Total) <= 31.1 tons/yr. Maximum emission limit based BOP100001. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~17~~	~~CO <= 63.3 tons/yr. Maximum emission limit based on BOP100001. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~18~~	~~SO2 <= 38.5 tons/yr. Maximum emission limit based on 160 ppmvd of H2S in fuel to furnace from BOP100001. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
19	NOx (Total) <= 249.1 tons/yr. Maximum emission limit based on BOP100001. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
20	If the decision is made to restart the Crude Unit, and Chevron requests an increase in PTE that results in cumulative NOx emissions greater than 250 tpyfrom these two qualified furnaces, then E1501 and E1502 shall be subject to BART and the facility's operating permit must be revised to include new applicable requirements. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~21~~	~~VOC (Total) <= 11.9 tons/yr. Maximum emission limit based on BOP100001. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~22~~	~~HAPs (Total) <= 1.84 tons/yr. Maximum emission limit based on BOP100001. Emission rates for individual HAPs are below the reporting threshold except for Arsenic, Cadmium compounds, Hexane and Lead emissions from furnace F-501 (E1501), and Lead emissions from furnace F-510 (E1502). [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~23~~	~~Arsenic compounds <= 0.001 tons/yr. Maximum emission limit based on the preconstruction permit for furnace F-501 (E1501). [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~24~~	~~Cadmium compounds <= 0.001 tons/yr. Maximum emission limit based on the preconstruction permit for furnace F-501 (E1501). [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~25~~	~~Hexane (n-) <= 1.83 tons/yr. Maximum emission limit based on BOP100001for furnace F-501 (E1501). [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT of ENVIRONMENTAL PROTECTION

Division of Air Quality
Bureau of Air Permits
401 E. State Street, 2nd floor, P.O. Box 420, Mail Code 401-02
Trenton, NJ 08625-0420

BOB MARTIN
Commissioner

Air Pollution Control Operating Permit
Significant Modification and Preconstruction Approval

Permit Activity Number: BOP110001 **Program Interest Number: 41805**

Mailing Address	Plant Location
DOUG LAFAYETTE SENIOR ENVIRONMENTAL ENGINEER CONOCOPHILLIPS CO 1400 PARK AVE Linden, NJ 07036	CONOCO PHILLIPS 1400 Park Ave Linden City Union County

Initial Operating Permit Approval Date: August 14, 2003
Significant Modification Approval Date: September 21, 2011
Operating Permit Expiration Date: August 13, 2008

This significant modification is approved and issued under the authority of Chapter 106, P.L. 1967 (N.J.S.A. 26:2C-9.2). The equipment at the facility must be operated in accordance with the requirements of this permit.

This approval, in response to your application, merges the provisions of the previously approved operating permit and the changes from this significant modification into a single comprehensive permit that replaces the one previously issued. This significant modification, based on EPA Consent Decree H-05-258, is for compliance with NSPS Subpart J which limits H2S content in fuel gas used mostly in process heaters to 0.1 gr/dscf or 162 ppmv. The reduced hydrogen sulfide content will also represent Best Available Retrofit Technology (BART) for the following heaters located at the refinery: E241, E242, E243, E245, E246, E247, E248, E249, E250, E253, and E258. Information regarding the final BART determinations may be found in the Technical Support Document located online at: http://www.state.nj.us/dep/baqp/sip/BART%202011_1.pdf

Equipment at the facility referenced by this significant modification **is covered by** the permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. However, this permit shield does not cover physical changes which were undertaken at the facility after March 3, 2003 and for which the facility did not seek an applicability determination for the Prevention of Significant Deterioration rule, codified at 40 CFR 52.21 (PSD), from the United States Environmental Protection Agency (USEPA). The issuance of this permit should not in any way be construed as a determination by the Department that the PSD rules do not apply. Any questions on applicability of PSD should be directed to USEPA Region II, Air Programs Branch, 21st Floor, 290 Broadway, New York, NY 10007-1866 (Phone: 212-637-4074). Pursuant to N.J.A.C. 7:27-22.33(e), this significant modification consists of both a preconstruction approval and operating permit approval. This operating permit does not include compliance schedules as part of the approved compliance plan.

The permittee shall submit to the Department and to the EPA a periodic compliance certification, in accordance with N.J.A.C. 7:27-22.19. The certification shall be submitted electronically through the NJDEP online web portal – Periodic Compliance Certification service, and shall be certified pursuant to N.J.A.C. 7:27-1.39 by the responsible official. Access to DEP Online shall be obtained by following the instructions at: http://www.state.nj.us/dep/online/. The certification should be printed for submission to EPA. The schedule for compliance certifications set forth in the compliance plan in this operating permit. The annual compliance certification reporting period will cover the calendar year ending December 31. **The annual compliance certification is due to the Department and the EPA within 60 days after the end of each calendar year during which this permit was in effect.** If unable to submit electronically, the certification shall be submitted on forms provided by the Department at: http://www.nj.gov/dep/enforcement/compliancecertsair.htm.

The annual compliance certification report may also be considered as your six month deviation report for the period from July 1 through December 31 which is due by January 30 of each year, as required by paragraph 13 in Section F, *General Provisions and Authorities,* of this permit, if the annual compliance certification is submitted by January 30.

New Jersey Department of Environmental Protection
Air & Environmental Quality Compliance & Enforcement
401 East State Street, P. O. Box 422
Trenton, New Jersey 08625-0422

United States Environmental Protection Agency, Region II
Air Compliance Branch
290 Broadway
New York, New York 10007-1866

New Jersey Department of Environmental Protection
Air and Environmental Quality Compliance & Enforcement
Northern Regional Enforcement Office
7 Ridgedale Avenue
Cedar Knolls, New Jersey 07927

Your facility's current approved operating permit and any previous versions (e.g. superseded, expired, or terminated) are now available for download in the PDF format at: http://www.nj.gov/dep/aqpp/. After accessing the website, click on "Approved Operating Permits" listed under "Reports" and then type in the Program Interested (PI) Number as instructed on the screen. A RADIUS file for your permit, containing Facility Specific Requirements (Compliance Plan), Inventories, and Compliance Schedules (if needed), can be obtained by contacting your permit writer. Upon importing this information into your personal computer with RADIUS software, you will have up-to-date information in RADIUS format. RADIUS software, instructions, and help are available at the Department's website at www.state.nj.us/dep/aqpp. We also have an Operating Permit Help Line available from 9:00 AM to 4:00 PM daily, where you may speak to someone about any questions you may have. The Operating Permit Help Line number is 609-633-8248.

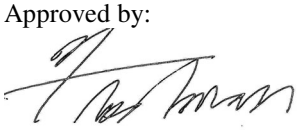
If, in your judgment, the Department is imposing any unreasonable condition of approval in this permit modification action, you may contest the Department's decision on the modification and request an adjudicatory hearing pursuant to N.J.S.A. 52:14b-1 et seq. and N.J.A.C. 7:27-22.32(a). All requests for an adjudicatory hearing must be received in writing by the Department within 20 calendar days of the date you receive this letter. The request must contain the information requested in N.J.A.C. 7:27-1.32 and the information on the enclosed Administrative Hearing Request Checklist and Tracking Form.

The permittee is responsible for submitting a timely and administratively complete operating permit renewal application. The Operating Permit Renewal Application consists of a RADIUS application and the Application Attachment available in Portable Document Format (PDF) and MS Word format at the Department's website http://www.nj.gov/dep/aqpp/applying.html (check Attachment to the RADIUS Operating Permit Renewal Application). Both the RADIUS application and the Application Attachment, along with any other supporting documents (saved on a CD) must be submitted with a cover letter (paper copy). The application is considered timely if it is received at least 12 months before the expiration date of the operating permit. To be deemed administratively complete, an application for renewal of the operating permit shall include all of the information required by the application form for the renewal and the information required pursuant to N.J.A.C. 7:27-22.30(d). However, consistent with N.J.A.C. 7:27-22.30(c), the permittee is encouraged to submit the renewal application at least 15 months prior to expiration of the operating permit, so that the Department can notify the applicant of any deficiencies in the application. This will allow the permittee to correct any deficiencies, and to better ensure that the application is administratively complete by the renewal deadline. Only applications which are timely and administratively complete will be eligible for coverage by an application shield.

Permittees that are subject to Compliance Assurance Monitoring (CAM), pursuant to 40 CFR 64, shall develop a CAM Plan for modified equipment as well as existing sources. Details of the rule and guidance on how to prepare a plan can be found at EPA's website: www.epa.gov/ttn/emc/cam.html. In addition, CAM Plans must be included as part of the permit renewal application. Permittees that do not submit a CAM Plan may have their modification applications denied, pursuant to N.J.A.C. 7:27-22.3.

If you have any questions regarding this permit approval, please call your permit writer, Partha Ganguli, at (609) 777-2821.

Approved by:



Max Friedman
Bureau of Air Permits

Enclosure

CC: S. Riva, USEPA Region II

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U3 Sulfur Bubble Process Heaters**
Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~No visible emissions except for a period of not longer than three minutes in any consecutive 30-minute period. [N.J.A.C. 7:27-3.2(a)] and. [N.J.A.C. 7:27- 3.2(c)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~VOC (Total) <= 38.2 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
3	NOx (Total) <= 880 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~4~~	~~CO <= 1,300 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
5	SO2 <= 241 tons/yr. [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by calculations each month during operation based on daily fuel sulfur analyses data and amount of fuel consumed. [N.J.A.C. 7:27-22.16(o)]	SO2: Recordkeeping by manual logging of parameter or storing data in a computer data system each month during operation. [N.J.A.C. 7:27-22.16(o)]	None.
~~6~~	~~TSP <= 104 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
7	PM-10 (Total) <= 113 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~8~~	~~PM-2.5 (Total) <= 113 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
9	NOx (Total) <= 186 tons/yr. Maximum annual emission limit for combined process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~10~~	~~CO <= 436 tons/yr. Maximum annual emission limit for combined process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~11~~	~~VOC (Total) <= 9.64 tons/yr. Maximum annual emission limit for combined process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~12~~	~~TSP <= 24.6 tons/yr. Maximum annual emission limit for combined process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
13	PM-10 (Total) <= 24.6 tons/yr. Maximum annual emission limit for combined process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~14~~	~~PM-2.5 (Total) <= 24.6 tons/yr. Maximum annual emission limit for combined process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None~~.
15	SO2 <= 58.9 tons/yr. Maximum annual emission limit for combined process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by calculations each month during operation based on daily fuel sulfur analyses data and amount of fuel consumed. [N.J.A.C. 7:27-22.16(o)]	SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage each month during operation. [N.J.A.C. 7:27-22.16(o)]	None.
~~16~~	~~NOx (Total) <= 260 tons/yr. Maximum annual emission limit for combined process heaters F-701, F-702 and F-752 (U3, OS14, OS15 & OS16 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None~~.
~~17~~	~~CO <= 298 tons/yr. Maximum annual emission limit for combined process heaters F-701, F-702 and F-752 (U3, OS14, OS15 & OS16 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~CO: Monitored by continuous emission monitor continuously, based on a consecutive 365 day period (rolling 1 day basis). The CEMS will have data logger and integrator to obtain lb/hr and tons/yr emission rates. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~18~~	~~VOC (Total) <= 10.2 tons/yr. Maximum annual emission limit for combined process heaters F-701, F-702 and F-752 (U3, OS14, OS15, & OS16 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~VOC (Total): Monitored by calculations annually based on average emission rate from stack test data and hours of operation. [N.J.A.C. 7:27-22.16(o)]~~	~~VOC (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage annually. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~19~~	~~TSP <= 33.9 tons/yr. Maximum annual emission limit for combined process heaters F-701, F-702 and F-752 (U3, OS14, OS15 & OS16 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~TSP: Monitored by calculations annually based on average emission rate from stack test data and hours of operation. [N.J.A.C. 7:27-22.16(o)]~~	~~TSP: Recordkeeping by stack test results annually. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~20~~	~~PM-10 (Total) <= 42.9 tons/yr. Maximum annual emission limit for combined process heaters F-701, F-702 and F-752 (U3, OS14, OS15 & OS16 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~PM-10 (Total): Monitored by calculations annually based on average emission rate from stack test data and hours of operation. [N.J.A.C. 7:27-22.16(o)]~~	~~PM-10 (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage annually. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~21~~	~~PM-2.5 (Total) <= 42.9 tons/yr. Maximum annual emission limit for combined process heaters F-701, F-702 and F-752 (U3, OS14, OS15 & OS16 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~PM-2.5 (Total): Monitored by calculations annually. [N.J.A.C. 7:27-22.16(o)]~~	~~PM-2.5 (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system annually. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~22~~	~~SO2 <= 70.7 tons/yr. Maximum annual emission limit for combined process heaters F-701, F-702 and F-752 (U3, OS14, OS15 & OS16 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~SO2: Monitored by calculations each month during operation based on daily fuel sulfur analyses data and amount of fuel consumed. [N.J.A.C. 7:27-22.16(o)]~~	~~SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage each month during operation. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~23~~	~~SO3 and H2SO4, as converted and expressed as H2SO4 <= 16.5 tons/yr. Maximum annual emission limit for combined process heaters F-701, F-702 and F-752 (U3, OS14, OS15, & OS16 respectively). [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~24~~	~~Ammonia Slip <= 8.76 tons/yr from CD65 (PT1).~~ ~~. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
25	Conduct a comprehensive stack test at emission point PT10 at least 18 months prior to the expiration of the approved operating permit to demonstrate compliance with the NOx and CO emission limits while firing refinery fuel gas in the heater E241. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing prior to permit renewal. Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. [N.J.A.C. 7:27-22.18(e)] and . [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
26	Conduct a comprehensive stack test at emission point PT11 at least 18 months prior to the expiration of the approved operating permit to demonstrate compliance with the NOx and CO emission limits while firing refinery fuel gas in the heaters E243, E245, E246, and E247. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing prior to permit renewal. Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. [N.J.A.C. 7:27-22.18(e)] and . [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
27	Conduct a comprehensive stack test at emission point PT12 at least 18 months prior to the expiration of the approved operating permit to demonstrate compliance with the NOx and CO emission limits while firing refinery fuel gas in the heater E248. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing prior to permit renewal. Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. [N.J.A.C. 7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
28	Conduct a comprehensive stack test at emission point PT14 at least 18 months prior to the expiration of the approved operating permit to demonstrate compliance with the NOx and CO emission limits while firing refinery fuel gas in the heater E250. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(o)]	Monitored by stack emission testing prior to permit renewal. Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. [N.J.A.C. 7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
30	Conduct a comprehensive stack test at the outlet of the heater E242 before it combines with other flows prior to exhausting from the emission point PT8 at least 18 months prior to the expiration of the approved operating permit to demonstrate compliance with the NOx and CO emission limits for heater E242 (OS11) while firing refinery fuel gas. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing prior to permit renewal. Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. [N.J.A.C. 7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
31	Conduct a comprehensive stack test at emission point PT17 at least 18 months prior to the expiration of the approved operating permit to demonstrate compliance with the NOx and CO emission limits while firing refinery fuel gas in the heater E253. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing prior to permit renewal. Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. [N.J.A.C. 7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
32	Conduct a stack test at emission point PT1** at least 18 months prior to the expiration of the approved operating permit to demonstrate compliance with the PM-10 emission limits while firing refinery fuel gas. **PT1 --- Tests are conducted at the exhaust of the SCR for F-701/F-752 and another test at the exhaust of F-702 (E258), and the results are added together. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing prior to permit renewal. Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. [N.J.A.C. 7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]
33	Combustion of fuel oil is not allowed in these furnaces. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~34~~	~~Refer to GR1 for common NSPS Subpart A permit requirements. [40 CFR 60]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
35	H2S in Fuel <= 162 ppmv (0.10 gr/dscf) in any 3-hour rolling period. [40 CFR 60.104(a)(1)]	H2S in Fuel: Monitored by fuel sampling (e.g. gas) continuously, based on a 3 hour rolling average based on a 1 hour block average. Install, calibrate, maintain, and operated an instrument for continuously monitoring and recording the concentration (dry basis) of H2S in fuel gases before being burned in any fuel gas combustion device. (i) The span value for this instrument is 425 mg/dscm H2S. (ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H2S in the fuel gas being burned. (iii) The performance evaluations for this H2S monitor under 40 CFR 60.13(c) shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations in accordance with 40 CFR 60.106(e). The monitor and recorder shall be located in a manner which allows easy access and visibility. [40 CFR 60.105(a)(4)]	H2S in Fuel: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [40 CFR 60.104(a)(4)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): As per the approved schedule. The report shall be postmarked by the 30th day following the end of each calendar half. The report shall be submitted and be in a format as specified at 40 CFR 60.7(c) and 40 CFR 60.7(d) (see attachment #1). [40 CFR 60.107(f)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
36	The permittee shall annually adjust the combustion process in the heater in the same quarter of each calendar year. The permittee shall: 1. Inspect the burner, and clean or replace any components of the burner as necessary; 2. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern consistent with the manufacturer's specifications; 3. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly; and 4. Minimize total emissions of NOx and CO consistent with the manufacturer's specifications. [N.J.A.C. 7:27-19.16(a)] and [N.J.A.C. 7:27-19.7(g)]	Monitored by periodic emission monitoring annually. The permittee shall: 1. Measure the concentrations in the effluent stream of NOx, CO and O2 in ppmvd, before and after the adjustment is made; and 2. Convert the emission values of the NOx, CO and O2 concentrations measured pursuant to (1) above to pounds per million BTU (lb/MM BTU) according to the following formula: lb/MM BTU = ppmvd x MW x F dry factor x O2 correction factor / 387,000,000 Where: ppmvd is the concentration in parts per million by volume, dry basis, of NOx or CO MW is the Molecular Weight for: NOx = 46 lb/lb-mole; CO = 28 lb/lb-mole F dry factor for: Natural gas = 8,710 dscf/MM BTU and Residual or fuel oil = 9,190 dscf/MM BTU O2 correction factor: (20.9%) / (20.9% - O2 measured) O2 measured is percent oxygen on a dry basis. [N.J.A.C. 7:27-19.16(a)]	Recordkeeping by manual logging of parameter or storing data in a computer data system annually Records shall contain the following information for each adjustment: 1. The date of the adjustment and the times at which it began and ended; 2. The name, title and affiliation of the person who made the adjustment; 3. The NOx and CO concentrations in the effluent stream, in ppmvd, before and after each actual adjustment was made; 4. The concentration of O2 (in percent dry basis) at which the CO and NOx concentrations were measured; 5. A description of any corrective action taken; 6. Results from any subsequent tests performed after taking any corrective action, including concentrations and converted emission values in pounds per million BTU (lb/MM BTU); and 7. The type and amount of fuel used over the 12 months prior to the annual adjustment. [N.J.A.C. 7:27-19.16(b)]	Submit a report: Annually within 45 days of the adjustment. Reports shall be submitted electronically in the format the department specifies at its website. The report shall contain the following: 1. The concentrations of NOx and CO in the effluent stream in ppmvd, and O2 in percent dry basis, measured before and after the adjustment of the combustion process 2. The converted emission values in lb/MM BTU for the measurements taken before and after the adjustment of the combustion process; 3. A description of any corrective actions taken as a part of the combustion adjustment; and 4. The type and amount of fuel used over the 12 months prior to the annual adjustment. N.J.A.C. 7:27-19.16(c) and . [N.J.A.C. 7:27-19.16(d)]
37	The owner or operator shall develop a QA/QC plan for all CEMS/COMS required by this permit prepared in accordance with the NJDEP Technical Manual 1005 posted on the AQPP webpage at http://www.state.nj.us/dep/aqpp. [N.J.A.C. 7:27-22.16(a)]	Other: The QA/QC coordinator shall be responsible for reviewing the QA/QC plan on an annual basis. [N.J.A.C. 7:27-22.16(o)].	Other: Maintain readily accessible records of the QA/QC plan including QA date and quarterly reports. [N.J.A.C. 7:27-22.16(o)].	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters

Operating Scenario: OS1 E241 - Process Heater 2 PFBW Hydrofiner F101, 74 MM Btu/hr, RFG, PT10

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 13.4 lb/hr. Particulate emission limit from the combustion of fuel based on rated heat input of source. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 170 lb/hr. Maximum allowable emission rate in any 60-minute period. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 340 lb/hr. Maximum allowable emission rate for any instant. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
4	NOx (Total) <= 0.2 lb/MMBTU. Maximum allowable emission rate from the NOx RACT rule. [N.J.A.C. 7:27-19.7(h)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs as allowed by N.J.A.C. 7:27-19. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~5~~	~~VOC (Total) <= 0.6 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
6	NOx (Total) <= 7 lb/hr. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~7~~	~~CO <= 8 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~
8	SO2 <= 2.21 lb/hr in any 3-hour rolling period. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~9~~	~~TSP <= 1.5 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
10	PM-10 (Total) <= 1.5 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters
Operating Scenario: OS2 E243 - Process Heater 2 PFBW Reheat F102, 167 MM Btu/hr, RFG, PT11

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 44.8 lb/hr from stack PT11. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 380 lb/hr. Maximum allowable emission rate in any 60-minute period from PT11. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 760 lb/hr. Maximum allowable emission rate for any instant from PT11. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~SO2 <= 2,000 ppmv at standard conditions. Maximum allowable concentration of SO2 in the gases being discharged into the atmosphere from stack, PT11. [N.J.A.C. 7:27- 7.2(b)1]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~VOC (Total) <= 2.2 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
6	NOx (Total) <= 42.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule : See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]
7	NOx (Total) <= 0.2 lb/MMBTU. Maximum allowable emission rate for F-102, F-103, F-104 and F-105 combined. Applies to OS2, OS3, OS4 and OS5. [N.J.A.C. 7:27-19.7(h)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~8~~	~~CO <= 99.5 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
9	SO2 <= 13.4 lb/hr in any 3-hour rolling period. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
10	~~TSP <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
11	PM-10 (Total) <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~12~~	~~PM-2.5 (Total) <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~13~~	~~Maximum Gross Heat Input <= 448 MMBTU/hr (HHV). Maximum combined heat input for process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~14~~	~~Annual Gross Heat Input <=3,924,480 MM Btu per any period of 365 consecutive days. Maximum annual combined heat input for process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by manual logging of parameter or storing data in a computer data system once per calendar day during operation. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters

Operating Scenario: OS3 E245 - Process Heater 2 PFBW Reheat F103, 90 MM Btu/hr, RFG, PT11

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 44.8 lb/hr from stack PT11. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 380 lb/hr. Maximum allowable emission rate in any 60-minute period from PT11. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 760 lb/hr. Maximum allowable emission rate for any instant from PT11. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~SO2 <= 2,000 ppmv at standard conditions. Maximum allowable concentration of SO2 in the gases being discharged into the atmosphere from stack, PT11. [N.J.A.C. 7:27- 7.2(b)1]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~VOC (Total) <= 2.2 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
6	NOx (Total) <= 42.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule : See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]
7	NOx (Total) <= 0.2 lb/MMBTU. Maximum allowable emission rate for NOx rule for F-102, F-103, F-104 and F-105 combined. Applies to OS2, OS3, OS4 and OS5. [N.J.A.C. 7:27-19.7(h)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~8~~	~~CO <= 99.5 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule : See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
9	SO2 <= 13.4 lb/hr in any 3-hour rolling period. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~10~~	~~TSP <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
11	PM-10 (Total) <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~12~~	~~PM-2.5 (Total) <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~13~~	~~Maximum Gross Heat Input <= 448 MMBTU/hr (HHV). Maximum combined heat input for process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~14~~	~~Annual Gross Heat Input <=3,924,480 MM Btu per any period of 365 consecutive days. Maximum annual combined heat input for process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by manual logging of parameter or storing data in a computer data system once per calendar day during operation . [N.J.A.C. 7:27-22.16(o)]~~	~~None~~.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters

Operating Scenario: OS4 E246 - Process Heater 2 PFBW Reheat F104, 108 MM Btu/hr, RFG, PT11

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 44.8 lb/hr from stack PT11. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 380 lb/hr. Maximum allowable emission rate in any 60-minute period from PT11. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 760 lb/hr. Maximum allowable emission rate for any instant from PT11. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~SO2 <= 2,000 ppmv at standard conditions. Maximum allowable concentration of SO2 in the gases being discharged into the atmosphere from stack, PT11. [N.J.A.C. 7:27- 7.2(b)1]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~VOC (Total) <= 2.2 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
6	NOx (Total) <= 42.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule : See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]
7	NOx (Total) <= 0.2 lb/MMBTU. Maximum allowable emission rate for NOx rule for F-102, F-103, F-104 and F-105 combined. Applies to OS2, OS3, OS4 and OS5. [N.J.A.C. 7:27-19.7(h)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~8~~	~~CO <= 99.5 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule : See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
9	SO2 <= 13.4 lb/hr in any 3-hour rolling period. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~10~~	~~TSP <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
11	PM-10 (Total) <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~12~~	~~PM-2.5 (Total) <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~13~~	~~Maximum Gross Heat Input <= 448 MMBTU/hr (HHV). Maximum combined heat input for process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~14~~	~~Annual Gross Heat Input <=3,924,480 MM Btu per any period of 365 consecutive days. Maximum annual combined heat input for process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by manual logging of parameter or storing data in a computer data system once per calendar day during operation . [N.J.A.C. 7:27-22.16(o)]~~	~~None~~.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters

Operating Scenario: OS5 E247 - Process Heater 2 PFBW Reheat F105, 83 MM Btu/hr, RFG, PT11

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 44.8 lb/hr from stack PT11. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 380 lb/hr. Maximum allowable emission rate in any 60-minute period from PT11. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 760 lb/hr. Maximum allowable emission rate for any instant from PT11. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~SO2 <= 2,000 ppmv at standard conditions. Maximum allowable concentration of SO2 in the gases being discharged into the atmosphere from stack, PT11. [N.J.A.C. 7:27- 7.2(b)1]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~VOC (Total) <= 2.2 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
6	NOx (Total) <= 42.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule : See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]
7	NOx (Total) <= 0.2 lb/MMBTU. Maximum allowable emission rate for NOx rule for F-102, F-103, F-104 and F-105 combined. Applies to OS2, OS3, OS4 and OS5. [N.J.A.C. 7:27-19.7(h)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~8~~	~~CO <= 99.5 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule : See protocol and submittal requirements elsewhere in this OS Summary. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
9	SO2 <= 13.4 lb/hr in any 3-hour rolling period. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~10~~	~~TSP <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
11	PM-10 (Total) <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~12~~	~~PM-2.5 (Total) <= 5.6 lb/hr. Maximum stack (PT11) emission limit for OS2, OS3, OS4, and OS5 combined. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~13~~	~~Maximum Gross Heat Input <= 448 MMBTU/hr (HHV). Maximum combined heat input for process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~14~~	~~Annual Gross Heat Input <=3,924,480 MM Btu per any period of 365 consecutive days. Maximum annual combined heat input for process heaters F-102, F-103, F-104 and F-105 (U3, OS2, OS3, OS4 & OS5 respectively). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: : Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by manual logging of parameter or storing data in a computer data system once per calendar day during operation. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters

Operating Scenario: OS6 E248 - Process Heater, 2 PFBW Regen F106, 66 MM Btu/hr, RFG, PT12

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 12.6 lb/hr. Particulate emission limit from the combustion of fuel based on rated heat input of source. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 66 lb/hr. Maximum allowable emission rate in any 60-minute period. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 132 lb/hr. Maximum allowable emission rate for any instant. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
4	NOx (Total) <= 0.2 lb/MMBTU. [N.J.A.C. 7:27-19.7(h)2]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~5~~	~~VOC (Total) <= 0.6 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
6	NOx (Total) <= 6.3 lb/hr. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~7~~	~~CO <= 9.8 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~
8	SO2 <= 1.97 lb/hr in any 3-hour rolling period. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~9~~	~~TSP <= 1.4 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
10	PM-10 (Total) <= 1.4 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U3 Sulfur Bubble Process Heaters**

Operating Scenario: **OS7 E249 - Process Heater, 2 PFBW Dryer F107, 10 MM Btu/hr, RFG, PT13**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 6 lb/hr. Particulate emission limit from the combustion of fuel based on rated heat input of source. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 60 lb/hr. Maximum allowable emission rate in any 60-minute period. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 120 lb/hr. Maximum allowable emission rate for any instant. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
4	NOx (Total) <= 0.2 lb/MMBTU. [N.J.A.C. 7:27-19.7(h)2]	None.	None.	None.
~~5~~	~~VOC (Total) <= 0.1 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
6	NOx (Total) <= 2 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~7~~	~~CO <= 3.7 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
8	SO2 <= 0.3 lb/hr in any 3-hour rolling period. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~9~~	~~TSP <= 0.2 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
10	PM-10 (Total) <= 0.2 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~11~~	~~PM-2.5 (Total) <= 0.2 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~12~~	~~Maximum Gross Heat Input <= 10 MMBTU/hr (HHV). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~13~~	~~Maximum Gross Heat Input <= 87,600 MMBTU/yr (HHV). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by manual logging of parameter or storing data in a computer data system annually. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters

Operating Scenario: OS8 E250 - Process Heater, 2 PFBW Reboiler F108, 114 MM Btu/hr, RFG, PT14

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 16.1 lb/hr. Particulate emission limit from the combustion of fuel based on rated heat input of source. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 230 lb/hr. Maximum allowable emission rate in any 60-minute period. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 460 lb/hr. Maximum allowable emission rate for any instant. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~SO2 <= 2,000 ppmv at standard conditions. Maximum allowable concentration of SO2 in the gases being discharged into the atmosphere from stack, PT11. [N.J.A.C. 7:27- 7.2(b)1]~~	~~None.~~	~~None.~~	~~None.~~
5	NOx (Total) <= 0.2 lb/MMBTU. [N.J.A.C. 7:27-19.7(h)2]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~6~~	~~VOC (Total) <= 1 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
7	NOx (Total) <= 10.8 lb/hr. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~8~~	~~CO <= 25.3 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
9	SO2 <= 3.41 lb/hr in any 3-hour rolling period. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~10~~	~~TSP <= 2.4 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
11	PM-10 (Total) <= 2.4 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~12~~	~~PM-2.5 (Total) <= 2.4 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~13~~	~~Maximum Gross Heat Input <= 114 MMBTU/hr (HHV). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~14~~	~~Maximum Gross Heat Input <= 998,640 MMBTU (HHV) per any 365 consecutive day period. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by manual logging of parameter or storing data in a computer data system once per calendar day during operation . [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters

Operating Scenario: OS11 E242 - Process Heater, DSU-1 Gas Oil Heater F101, 51 MM Btu/hr, RFG, PT8

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 11.1 lb/hr. Particulate emission limit from the combustion of fuel based on rated heat input of source from PT8. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 230 lb/hr. Maximum allowable emission rate in any 60-minute period from PT8. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 460 lb/hr. Maximum allowable emission rate for any instant from PT8. [N.J.A.C. 7:27 7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~SO2 <= 2,000 ppmv at standard conditions. Maximum allowable concentration of SO2 in the gases being discharged into the atmosphere from stack, PT8. [N.J.A.C. 7:27-7.2(b)1]~~	~~None.~~	~~None.~~	~~None.~~
5	NOx (Total) <= 0.2 lb/MMBTU. [N.J.A.C. 7:27-19.7(h)2]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~6~~	~~VOC (Total) <= 0.4 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
7	NOx (Total) <= 5.1 lb/hr. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~8~~	~~CO <= 11.3 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results prior to permit renewal. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See protocol and submittal requirements elsewhere in U3, OS Summary. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
9	SO2 <= 1.53 lb/hr in any 3-hour rolling period. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~10~~	~~TSP <= 1.1 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
11	PM-10 (Total) <= 1.1 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~12~~	~~PM-2.5 (Total) <= 1.1 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~13~~	~~Maximum Gross Heat Input <= 51 MMBTU/hr (HHV). [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~14~~	~~Maximum Gross Heat Input <= 446,760 MMBTU (HHV) per any 12 consecutive month period. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by manual logging of parameter or storing data in a computer data system each month during operation. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters
Operating Scenario: OS13 E253 - Process Heater, DSU-2 F401, 139 MM Btu/hr, RFG, PT17

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Particulate Emissions <= 17.5 lb/hr. Particulate emission limit from the combustion of fuel based on rated heat input of source. [N.J.A.C. 7:27- 4.2(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~SO2 <= 515 lb/hr. Maximum allowable emission rate in any 60-minute period. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~SO2 <= 1,030 lb/hr. Maximum allowable emission rate for any instant. [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]~~	~~None.~~	~~None.~~	~~None.~~
~~4~~	~~SO2 <= 2,000 ppmv at standard conditions. Maximum allowable concentration of SO2 in the gases being discharged into the atmosphere from stack, PT11. [N.J.A.C. 7:27- 7.2(b)1]~~	~~None.~~	~~None.~~	~~None.~~
5	NOx (Total) <= 0.2 lb/MMBTU. [N.J.A.C. 7:27-19.7(h)2]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on the average of three Department validated stack test runs. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results upon occurrence of event. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~6~~	~~VOC (Total) <= 0.4 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
7	NOx (Total) <= 13.9 lb/hr. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results upon occurrence of event. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]
~~8~~	~~CO <= 9.8 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by stack emission testing prior to permit renewal, based on each of three Department validated stack test runs. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~CO: Recordkeeping by stack test results upon occurrence of event. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See the stack testing requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]~~
9	SO2 <= 4.16 lb/hr in any 3-hour rolling period. [40 CFR 51.308(e)] and. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~10~~	~~TSP <= 1 lb/hr. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
11	PM-10 (Total) <= 1 lb/hr. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~12~~	~~PM-2.5 (Total) <= 1 lb/hr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~13~~	~~Maximum Gross Heat Input <= 139 MMBTU/hr. Maximum heat input from preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~14~~	~~Annual Gross Heat Input <= 1,217,640 MM Btu per any period of 365 consecutive days. [N.J.A.C. 7:27-22.16(e)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow and daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by manual logging of parameter or storing data in a computer data system once per calendar day during operation . [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U3 Sulfur Bubble Process Heaters
Operating Scenario: OS15 E258 - No. 7 Pipestill OBFT Heater F702, RFG Firing, PT1

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Particulate Emissions <= 128 lb/hr. Particulate emission limit from the combustion of fuel based on rated heat input of source from PT1 (OS14, OS15 & OS16). [N.J.A.C. 7:27- 4.2(a)]	None.	None.	None.
2	SO2 <= 900 lb/hr. Maximum allowable emission rate in any 60-minute period from PT1 (OS14, OS15 & OS16). [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]	None.	None.	None.
3	SO2 <= 1,800 lb/hr. Maximum allowable emission rate for any instant from PT1 (OS14, OS15 & OS16). [N.J.A.C. 7:27-7.2(b)(2)] and. [N.J.A.C. 7:27- 7.2(r)]	None.	None.	None.
4	SO2 <= 2,000 ppmv at standard conditions. Maximum allowable concentration of SO2 in the gases being discharged into the atmosphere from stack, PT1 (OS14, OS15 & OS16). [N.J.A.C. 7:27- 7.2(b)1]	None.	None.	None.
5	VOC (Total) <= 4.6 lb/hr. Maximum emission limit for stack PT1 (OS14, OS15 & OS16). . [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
6	NOx (Total) <= 59.3 lb/hr. Maximum emission limit for stack PT1 (OS14, OS15 & OS16 combined). [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. The continuous emission monitor and recorder shall conform to 40 CFR 60 Appendix B and F, and 40 CFR 75, as applicable. This is combined emissions from two CEMS: One for F-702 heater and the other for combined F-701 & F-752 heaters. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. The continuous emission monitor and recorder shall conform to 40 CFR 60 Appendix B and F, and 40 CFR 75, as applicable. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). [N.J.A.C. 7:27-22.16(o)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~14~~	~~Annual Gross Heat Input <= 11,169,000 MM Btu per any period of 365 consecutive days. Combined gross heat input for OS14, OS15 and OS16. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Maximum Gross Heat Input shall be monitored continuously by a system that monitors both fuel flow (gas) and the daily average heating value of refinery fuel gas.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by manual logging of parameter or storing data in a computer data system once per calendar day during operation. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
15	NOx (Total) <= 0.2 lb/MMBTU. [N.J.A.C. 7:27-19.7(h)2]	None.	None.	None.
16	NOx (Total) <= 36 lb/hr for the heater F-702. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. The CEMS will have data logger and integrator to obtain lb/hr emission rates. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]
~~17~~	~~VOC (Total) <= 1.75 lb/hr for the heater F-702. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~18~~	~~CO <= 82.3 lb/hr for the heater F-702. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~19~~	~~TSP <= 5.35 lb/hr for the heater F-702. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~20~~	~~SO3 and H2SO4, as converted and expressed as H2SO4 <= 1.49 lb/hr for the heater F-702. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
21	PM-10 (Total) <= 5.35 lb/hr for the heater F-702. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~22~~	~~PM-2.5 (Total) <= 5.35 lb/hr for the heater F-702. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
23	Process Heaters fuel limited to Refinery Fuel Gas (RFG) with a Hydrogen Sulfide content <= 60 ppmvd in any consecutive 365 days rolling average period, and natural gas. [N.J.A.C. 7:27-22.16(a)]	Monitored by parametric monitoring system continuously for refinery fuel gas. Install, calibrate, maintain, and operated an instrument for continuously monitoring and recording the concentration (dry basis) of H2S in fuel gases before being burned in any fuel gas combustion device. . [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT of ENVIRONMENTAL PROTECTION

Division of Air Quality
Bureau of Air Permits
401 E. State Street, 2nd floor, P.O. Box 27
Trenton, NJ 08625-0027

BOB MARTIN
Commissioner

Air Pollution Control Operating Permit
Minor Modification and Preconstruction Approval

Permit Activity Number: BOP110001 **Program Interest Number: 12202**

Mailing Address	Plant Location
JAMES PFENNIGWERTH PLANT MGR PSE&G FOSSIL LLC HUDSON GENERATING STATION DUFFIELD AVE & VAN KEUREN AVE Jersey City, NJ 07306	PSEG FOSSIL LLC HUDSON GENERATING STATION Duffield & Van Keuren Aves Jersey City Hudson County

Initial Operating Permit Approval Date: **December 29, 2005**
Minor Modification Approval Date: **March 8, 2011**
Operating Permit Expiration Date: **December 28, 2010 (Operating under application shield)**

This minor modification is approved and issued under the authority of Chapter 106, P.L. 1967 (N.J.S.A. 26:2C-9.2). The equipment at the facility must be operated in accordance with the requirements of this permit.

This approval, in response to your application, merges the provisions of the previously approved operating permit and the changes from this minor modification into a single comprehensive permit that replaces the one previously issued. This minor modification includes changes requested by PSEG Fossil in three minor modification applications as follows:

1. BOP110001- Application dated 1/6/2011 – Add BART Requirements.

In order to satisfy Best Available Retrofit Technology (BART) requirement for Hudson Unit No. 1, PSEG has submitted this minor modification to the Title V Operating Permit to include the following more stringent NOx requirements:

a. include emission limit of 1.0 lb/MW-hr when burning natural gas with a compliance date of May 1, 2015, to coincide with the revised RACT plus rule requirements at N.J.A.C. 7:27-19.4 Table 3
b. include emission limit of 2.0 lb/MW-hr when burning # 6 oil with a compliance date of May 1, 2015, to coincide with the revised RACT plus rule requirements at N.J.A.C. 7:27-19.4 Table 3
c. burn # 6 oil with a sulfur content of 0.3 % sulfur only when natural gas is curtailed.

These requirements are included in this modification.

2. **BOP100001: Application dated 4/15/2010: To Include PM10 limits**:

PSEG Fossil submitted this minor modification application to include PM10 emission limits that are based on the data collected during annual stack emissions testing conducted from 2002 – 2008 per the current consent decree on Hudson Unit No. 2, a 6600 MMBtu/hr coal fired boiler with natural gas and oil as backup, as well as data collected during stack emissions testing conducted on Hudson Unit No. 1, a 4558 MMBtu/hr natural gas fired boiler with oil as backup, in 2007 for natural gas firing. Since Hudson unit No. 1 has not burned oil for several years AP-42 emission factors from Table 1.3-1 and 1.3-2 (Sept 1998) have been used to establish emission limit for PM10.

As requested in this modification, PM10 emissions are being added to the following requirements:

U1, OS Summary, Ref #4, addition of PM10 stack testing requirements.
U1, OS Summary, Ref #16, addition of PM10 emissions of 995 tons/yr for Unit No. 1
U1, OS1, Ref #7, addition of PM10 emissions of 100.3 lb/hr for Unit No.1 firing natural gas
U1, OS2, Ref #9, addition of PM10 emissions of 227.3 lb/hr for Unit No. 1 firing #6 oil
U2, OS Summary, Ref #79, addition of PM10 emissions of 5,122 tons/yr for Unit No. 2
U2, OS Summary, Reference # 50, addition of PM10 stack testing requirements.

The applicable requirement at U1, OS Summary, Ref # 4 states that a comprehensive stack test for NOx, CO, VOC and TSP is required to be conducted for fuel oil #6 firing within 180 days of initial use of #6 oil and annually thereafter in any year in which #6 oil is burned. However the monitoring, record keeping and submittal/action requirements inadvertently require annual testing whether # 6 oil is burned or not. The phrase "in any calendar year in which # 6 fuel oil is burned" is added to the monitoring, record keeping and submittal/action requirements of U1, OS Summary, Ref # 4, to make them consistent with the applicable requirement.

3. BOP080002 – dated 11/17/08 : To add the emissions of Ammonia and other air contaminants

On the request of PSEG Fossil emission levels for ethane and ammonia for Unit 1, Unit 2, and ethane emissions for Unit 3 (Auxiliary Boilers) and Unit 7 (Fire Pump), are being added to the permit as the total emissions of these two pollutants from the facility are above the 100 tpy major facility threshold as outlined in Table A of the Appendix to N.J.A.C. 7:27-22.

Equipment at the facility referenced by this minor modification **is not covered by** the permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. Pursuant to N.J.A.C. 7:27-22.33(e), this minor modification consists of both a preconstruction approval and operating permit approval. This operating permit does not include compliance schedules as part of the approved compliance plan.

The permittee shall submit to the Department and to the EPA on forms provided by the Department, at the addresses given below, a periodic compliance certification, in accordance with N.J.A.C. 7:27-22.19 and the schedule for compliance certifications set forth in the compliance plan in this operating permit. The annual compliance certification reporting period will cover the calendar year ending December 31. **The annual compliance certification is due to the Department and the EPA within 60 days after the end of each calendar year during which this permit was in effect.** Forms provided by the Department can be found on the Department's website at: http://www.nj.gov/dep/enforcement/compliancecertsair.htm.

The annual compliance certification report may also be considered as your six month deviation report for the period from July 1 through December 31 which is due by January 30 of each year, as required by paragraph 13 in Section F, *General Provisions and Authorities,* of this permit, if the annual compliance certification is submitted by January 30.

New Jersey Department of Environmental Protection
Air & Environmental Quality Compliance & Enforcement
401 East State Street, P. O. Box 422
Trenton, New Jersey 08625-0422

United States Environmental Protection Agency, Region II
Air Compliance Branch
290 Broadway
New York, New York 10007-1866

New Jersey Department of Environmental Protection
Air and Environmental Quality Compliance & Enforcement
Northern Regional Enforcement Office
7 Ridgedale Avenue
Cedar Knolls, New Jersey, 07927

Your facility's current approved operating permit and any previous versions (e.g. superseded, expired, or terminated) are now available for download in the PDF format at: http://www.nj.gov/dep/aqpp/. After accessing the website, click on "Approved Operating Permits" listed under "Reports" and then type in the Program Interested (PI) Number as instructed on the screen. A RADIUS file for your permit, containing Facility Specific Requirements (Compliance Plan), Inventories, and Compliance Schedules (if needed), can be obtained by contacting your permit writer. Upon importing this information into your personal computer with RADIUS software, you will have up-to-

date information in RADIUS format. RADIUS software, instructions, and help are available at the Department's website at www.state.nj.us/dep/aqpp. We also have an Operating Permit Help Line available from 9:00 AM to 4:00 PM daily, where you may speak to someone about any questions you may have. The Operating Permit Help Line number is 609-633-8248.

If, in your judgment, the Department is imposing any unreasonable condition of approval in this permit modification action, you may contest the Department's decision on the modification and request an adjudicatory hearing pursuant to N.J.S.A. 52:14b-1 et seq. and N.J.A.C. 7:27-22.32(a). All requests for an adjudicatory hearing must be received in writing by the Department within 20 calendar days of the date you receive this letter. The request must contain the information requested in N.J.A.C. 7:27-1.32 and the information on the enclosed Administrative Hearing Request Checklist and Tracking Form.

The permittee is responsible for submitting a timely and administratively complete operating permit renewal application. The Operating Permit Renewal Application consists of a RADIUS application and the Application Attachment available in Portable Document Format (PDF) and MS Word format at the Department's website http://www.nj.gov/dep/aqpp/applying.html (check Attachment to the RADIUS Operating Permit Renewal Application). Both the RADIUS application and the Application Attachment, along with any other supporting documents (saved on a CD) must be submitted with a cover letter (paper copy). The application is considered timely if it is received at least 12 months before the expiration date of the operating permit. To be deemed administratively complete, an application for renewal of the operating permit shall include all of the information required by the application form for the renewal and the information required pursuant to N.J.A.C. 7:27-22.30(d). However, consistent with N.J.A.C. 7:27-22.30(c), the permittee is encouraged to submit the renewal application at least 15 months prior to expiration of the operating permit, so that the Department can notify the applicant of any deficiencies in the application. This will allow the permittee to correct any deficiencies, and to better ensure that the application is administratively complete by the renewal deadline. Only applications which are timely and administratively complete will be eligible for coverage by an application shield.

Permittees that are subject to Compliance Assurance Monitoring (CAM), pursuant to 40 CFR 64, shall develop a CAM Plan for modified equipment as well as existing sources. Details of the rule and guidance on how to prepare a plan can be found at EPA's website: www.epa.gov/ttn/emc/cam.html. In addition, CAM Plans must be included as part of the permit renewal application. Permittees that do not submit a CAM Plan may have their modification applications denied, pursuant to N.J.A.C. 7:27-22.3.

If you have any questions regarding this permit approval, please call your permit writer, Aliya M. Khan, at (609) 292-2169.

Approved by:

_____

Aliya M. Khan
Bureau of Air Permits

Enclosure
CC: S. Riva, USEPA Region II
[Chief NRO] (Signature Page Only)

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U1 Utility boiler - natural gas or No. 6 fuel oil fired (4,558 MMBTU/hr)**
Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Compliance shall be determined by continuous emission monitoring for SO2, NOx, CO2, CO and O2 as per the requirements specified in 40 CFR 75. [N.J.A.C. 7:27-22.16(a)]	Other: Monitored by continuous emission monitoring system continuously. Comply with approved protocols and the requirements of 40 CFR 75.[N.J.A.C. 7:27-22.16(a)].	Other: Recordkeeping by strip chart or round chart and data acquisition (DAS) system / electronic data storage. Continuously. Comply with the approved protocols and the requirements of 40 CFR 75.[N.J.A.C. 7:27-22.16(a)].	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal to the Department for review and approval. [N.J.A.C. 7:27-22.16(o)]
~~2~~	~~Conduct a stack test at emission point PT1within 180 days of operating permit approval to demonstrate compliance with NOx and CO emission limits when firing natural gas.~~ ~~Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(a)]~~	~~Monitored by stack emission testing once initially. Where an applicable requirement requires stack testing for compliance demonstration, compliance will be based on any 60-minute period unless otherwise indicated in the applicable requirement. The facility may propose in a stack testing protocol the use of the CEM monitors to determine the CO and NOx concentrations during stack testing. Any use of the CEMs for stack testing shall only be permitted upon prior approval of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]~~	~~Other: Stack test results.[N.J.A.C. 7:27-22.16(o)].~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 60 days from the date of the approved operating permit.~~ ~~Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist.~~ ~~A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall be reported in lb/hr, lb/MMBTU (HHV) and ppmvd @ 7% O2 (CO only) .[N.J.A.C. 22.18(e)]&. [N.J.A.C. 7:27-22.18(h)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	Conduct a comprehensive stack test at emission point PT1 by 18 months prior to the expiration date of the approved Operating Permit to demonstrate compliance with the stack emission testing for NOx and CO emission limits. Testing shall be conducted when firing natural gas. When conducting stack emission testing, a minimum of three one-hour test runs shall be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition [N.J.A.C. 7:27-22.16(o)]	Monitored by stack emission testing every 5 years. Where an applicable requirement requires stack testing for compliance demonstration, compliance will be based on any 60-minute period unless otherwise indicated in the applicable requirement. The facility may propose in a stack testing protocol the use of the CEM monitors to determine the CO and NOx concentrations during stack testing. Any use of the CEMs for stack testing shall only be permitted upon prior approval of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results every 5 years. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 30 months from the date of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall be reported in lb/hr, lb/MMBTU (HHV) and ppmvd @ 7% O2 (CO only).[N.J.A.C. 22.18(e)]&. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
4	Conduct a comprehensive stack test at emission point PT1 to demonstrate compliance with the NOx, CO, VOC, TSP and PM10 emission limits for fuel oil #6 firing within 180 days of initial use of # 6 fuel oil and annually thereafter in any calendar year in which # 6 fuel oil is burned. When conducting stack emission testing, a minimum of three one-hour test runs shall be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. In addition, the fuel oil #6 shall be analyzed for sulfur content at the time of the fuel oil #6 stack tests. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing annually , in any calendar year in which # 6 fuel oil is burned. Where an applicable requirement requires stack testing for compliance demonstration, compliance will be based on any 60-minute period unless otherwise indicated in the applicable requirement. The facility may propose in a stack testing protocol the use of the CEM monitors to determine the CO and NOx concentrations during stack testing. Any use of the CEMs for stack testing shall only be permitted upon prior approval of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results annually and certified lab analysis, in any calendar year in which # 6 fuel oil is burned. See Applicable Requirement. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 180 days and annually thereafter, in any calendar year in which # 6 fuel oil is burned, from the date of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall be reported in lb/hr, lb/MMBTU (HHV) and ppmvd @ 7% O2 (for VOC and CO only) and fuel sulfur content shall be reported in weight percent. [N.J.A.C. 7:27-22.16(o)]
~~5~~	~~Particulate emission limit from the combustion of fuel based on rated heat input of source. Particulate Emissions <= 456 lb/hr. [N.J.A.C. 7:27- 4.2(a)]~~	~~Other: Stack Emission Testing. (See Applicable Requirement for U1 OS Summary Ref. #4).[N.J.A.C. 7:27-22.16(o)].~~	~~Particulate Emissions: Recordkeeping by stack test results at the approved frequency (See Applicable Requirement for U1 OS Summary Ref. #4). [N.J.A.C. 7:27-22.16(o)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule (See Applicable Requirement for U1 OS Summary Ref. #4). [N.J.A.C. 7:27-22.16(o)]~~
~~6~~	~~VOC (Total) <= 50 ppmvd @ 7% O2. [N.J.A.C. 7:27-16.8(b)1]~~	~~Other: See stack testing requirments at U1 OS0 Ref #4. Compliance with this requirement will be based on the average of three one-hour tests.[N.J.A.C. 7:27-16.24].~~	~~VOC (Total): Recordkeeping by stack test results annually. [N.J.A.C. 7:27-22.16(o)]~~	~~Other (provide description): As per the approved schedule (See U1 OS Summary Ref. # 4). [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
8	Adjust the combustion process in accordance with N.J.A.C.7:27-19.16 by May 1 of each calendar year or within seven days of the period of operation after May 1, if not operated between January 1 and May 1 of that year. Record NOx and CO conc. after each adjustment and the O2 conc. at which NOx and CO were measured. [N.J.A.C. 7:27-19.4(c)] [N.J.A.C. 7:27-16.b(3)]	Other: CEM or portable instrument. Annually.[N.J.A.C. 7:27-16.8(b)3].	Recordkeeping by manual logging of parameter or storing data in a computer data system annually in a permanently bound logbook or readily accessible computer memory containing the following information for each adjustment: 1. The date of the adjustment and the times at which it began and ended; 2. The name, title and affiliation of the person who made the adjustment; 3. The NOx and CO concentration in the effluent stream, in ppmvd, before and after each adjustment was made; 4. The concentration of O2 (in percent dry basis) at which the CO and NOx concentrations were measured pursuant to the steps 3 a above; 5. A description of any corrective action taken; 6. Results from any subsequent tests performed after taking any corrective action, including concentrations and converted emission values in pounds per million BTU (lb/MMBtu); 7. The type and amount of fuel used over the 12 months prior to the annual adjustment; and 8. Any other information which the Department or EPA has required as a condition of approval of any permit or certificate issued for the equipment or source operation. [N.J.A.C. 7:27-16.24]	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
38	The owner or operator shall develop a QA/QC plan for all CEMS/COMS required by this permit. This QA/QC plan shall incorporate at a minimum those procedures outlined in 40 CFR, Part 60, Appendix F and/or 40 CFR, Part 75, Appendix B for CEMS and those procedures outlined in 40 CFR, Part 60, Appendix B, Specification One and 40 CFR, Part 51, Proposed RM 203 for COMS, published Department Technical Manuals or other procedures approved in writing by the Department. The QA/QC plan shall designate a coordinator for the facility who is responsible to ensure that the QA/QC plan is implemented. The Department reserves the right to require the QA/QC plan to be revised at any time based on the results of quarterly EEMPR reviews, inspections, audits or any other information available to the Department. All procedures outlined in the QA/QC plan shall commence upon the completion date of the PST. All redundant CEMS/COMS must undergo the QA/QC procedure. [N.J.A.C. 7:27-22.16(a)]	Other: The QA/QC coordinator shall be responsible for reviewing the QA/QC plan on an annual basis.[N.J.A.C. 7:27-22.16(o)].	Other: Maintain readily accessible records of the QA/QC plan including QA date and quarterly reports. [N.J.A.C. 7:27-22.16(o)].	Submit a report: Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). All quarterly and annual QA data shall be included in quarterly EEMPR reports and kept on file at the facility. The QA data must be made available to the Department upon request. Any changes to the QA/QC plan shall be submitted in writing to the Supervisor/CEMS Program of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]
~~39~~	~~For equipment subject to Clean Air Interstate Rule (CAIR) NOx Trading Program, comply with N.J.A.C. 7:27-30. [N.J.A.C. 7:27-30]~~	~~Other: See N.J.A.C. 7:27-30. [N.J.A.C. 7:27-30].~~	~~Other: See N.J.A.C. 7:27-30. [N.J.A.C. 7:27-30].~~	~~Comply with the requirement: Upon occurrence of event. [N.J.A.C. 7:27-30]~~
~~40~~	~~The permittee shall comply with all of the requirements of Clean Air Interstate Rule (CAIR) permit for the CAIR NOX Annual Trading Program, CAIR NOX Ozone Season Trading Program, and CAIR SO2 Trading Program issued for this affected unit. [40 CFR 97].~~ ~~[40 CFR 97]~~	~~Other: See attached CAIR Permit [40 CFR 97].~~	~~Other: See attached CAIR Permit [40 CFR 97].~~	~~See attached CAIR Permit~~ ~~Other (provide description): Other. [40 CFR 97]~~
~~41~~	~~For equipment subject to CO2 Budget Trading Program, comply with N.J.A.C. 7:27C. [N.J.A.C. 7:27C]~~	~~Other: See N.J.A.C. 7:27C. [N.J.A.C. 7:27C].~~	~~Other: See N.J.A.C. 7:27C. [N.J.A.C. 7:27C].~~	~~Comply with the requirement: Upon occurrence of event. [N.J.A.C. 7:27C]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U1 Utility boiler - natural gas or No. 6 fuel oil fired (4,558 MMBTU/hr)**
Operating Scenario: **OS1 Utility boiler firing natural gas**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Opacity: No visible emissions greater than 20% opacity, exclusive of condensed water vapor, except for a period of not longer than 3 minutes in any consecutive 30-minute period. [N.J.A.C.7:27-3.2(a)] & [N.J.A.C. 7:27- 3.2(c)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~VOC (Total) <= 123.1 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~NOx (Total) <= 1,960 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on one calendar day and stack emission test (U1 OS Summary Ref. #1, 2, 3 & 4 for CEM and stack testing requirements). [N.J.A.C. 7:27-22.16(o)]~~	~~Other: Recordkeeping by strip chart or round chart and data acquisition (DAS) system / electronic data storage continuously as well as stack test results (U1 OS Summary Ref. #1, 2, 3 & 4 for CEM and stack testing requirments).[N.J.A.C. 7:27-22.16(o)].~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. (U1 OS Summary Ref. #1, 2, 3 & 4 for EEMPR submittal and stack testing requirements). [N.J.A.C. 7:27-22.16(o)]~~
~~4~~	~~CO <= 433 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~CO: Monitored by continuous emission monitoring system continuously, based on one calendar day and stack emission test (U1 OS Summary Ref. #1, 2, 3 & 4 for CEM and stack testing requirements). [N.J.A.C. 7:27-22.16(o)]~~	~~Other: Recordkeeping by strip chart or round chart and data acquisition (DAS) system / electronic data storage continuously as well as stack test results (U1 OS Summary Ref.#1, 2, 3 & 4 for CEM and stack testing requirements).[N.J.A.C. 7:27-22.16(o)].~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. (U1 OS Summary Ref. #1, 2, 3 & 4 for EEMPR submittal and stack testing requirements). [N.J.A.C. 7:27-22.16(o)]~~
5	SO2 <= 7.8 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~6~~	~~TSP <= 456 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
7	PM-10 (Total) <= 100.3 lb/hr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~8~~	~~Maximum emission rate from NOx Emissions Averaging Plan. NOx (Total) <= 0.39 lb/MMBTU. [N.J.A.C. 7:27-19.14]~~	~~Other: Monitored by continuous emission monitoring system continuously and stack emission testing (For CEM and stack testing requirements, see U1 OS Summary Ref. #1, 2, 3 & 4).~~ ~~PSEG must comply with the requirements of the PSEG's NOx Emissions Averaging Plan as approved and modified by the Department[N.J.A.C. 7:27-19.14].~~	~~Other: Recordkeeping by strip chart or round chart and data acquisition (DAS) system / electronic data storage continuously as well as stack test results (See U1 OS Summary Ref.#1, 2, 3 & 4 for CEM and stack testing requirements).[N.J.A.C. 7:27-19.14].~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See U1 OS Summary Ref. ##1, 2, 3 & 4 for EEMPR submittal and stack testing requirments.~~ ~~PSEG must comply with the requirements of the PSEG's NOx Emissions Averaging Plan as approved and modified by the Department. [N.J.A.C. 7:27-19.14]~~
9	NOx (Total) <= 1 lb/MW-hr when combusting natural gas. This limit will become operative on and after May 1, 2015. [N.J.A.C. 7:27-19.4(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a calendar day (in ozone season) or 30 day rolling (at other times) average. [N.J.A.C. 7:27-19.15(a)1]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-19.19(a)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): On or before every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U1 Utility boiler - natural gas or No. 6 fuel oil fired (4,558 MMBTU/hr)**
Operating Scenario: **OS2 Utility boiler firing No. 6 fuel oil**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Opacity: No visible emissions greater than 20% opacity, exclusive of condensed water vapor, except for a period of not longer than 3 minutes in any consecutive 30-minute period. [N.J.A.C.7:27-3.2(a)] & [N.J.A.C. 7:27- 3.2(c)]~~	~~Opacity: Monitored by continuous opacity monitoring system continuously using approved protocol. [N.J.A.C. 7:27-22.16(o)]~~	~~Opacity: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. Reports shall be submitted to the Northern Regional Enforcement Office. [N.J.A.C. 7:27-22.16(o)]~~
2	Sulfur Content in Fuel <= 0.3 % , Maximum allowable sulfur content in fuel by fuel oil type/viscosity and geographical zone. [N.J.A.C. 7:27- 9.2(b)]	Sulfur Content in Fuel: Monitored by review of fuel delivery records per delivery. [N.J.A.C. 7:27-22.16(o)]	Sulfur Content in Fuel: Recordkeeping by invoices / bills of lading per delivery or by manaual logging in a permanently bound log book or readily accessible computer files per delivery. [N.J.A.C. 7:27-22.16(o)]	None.
3	Sulfur Content in Fuel <= 0.3 % by weight. Maximum allowable sulfur content in fuel by fuel oil type/viscosity and geographical zone. [N.J.A.C. 7:27- 9.2(b)]	Other: Fuel sulfur testing. Annually.[N.J.A.C. 7:27-22.16(o)].	Other: Keep certificate of analysis showing fuel sulfur content, annually.[N.J.A.C. 7:27-22.16(o)].	None.
~~4~~	~~VOC (Total) <= 132 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: See stack testing requirements at U1 OS0 Ref #4.[N.J.A.C. 7:27-22.16(a)].~~	~~Other: See stack testing requirements at U1 OS0 Ref #4.[N.J.A.C. 7:27-22.16(a)].~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See stack testing requirements at U1 OS0 Ref #4. [N.J.A.C. 7:27-22.16(a)]~~
~~5~~	~~NOx (Total) <= 1,960 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on each of three Department validated stack test runs and stack emission test (See U1 OS Summary Ref. #s #1, 2, 3 & 4 for CEM and stack testing requirements). [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Recordkeeping by strip chart or round chart and data acquisition (DAS) system / electronic data storage continuously as well as stack test results (See U1 OS Summary Ref. #s #1, 2, 3 & 4 for CEM and stack testing requirements).[N.J.A.C. 7:27-22.16(a)].~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. (See U1 OS Summary Ref. #s 1, 2, 3 & 4 for EEMPR submittal and stack testing details). [N.J.A.C. 7:27-22.16(a)]~~
~~6~~	~~CO <= 456 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~CO: Monitored by continuous emission monitoring system continuously, based on each of three Department validated stack test runs and stack emission test (See U1 OS Summary Ref. #s 1, 2, 3 & 4 for CEM and stack testing requirements). [N.J.A.C. 7:27-22.16(a)]~~	~~CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously as well as stack test results (See U1 OS Summary Ref. #s 1, 2, 3 & 4 for CEM and stack testing requirements). [N.J.A.C. 7:27-22.16(a)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. (See U1 OS Summary Ref. #s 1, 2, 3 & 4 for EEMPR submittal and stack testing requirements). [N.J.A.C. 7:27-22.16(a)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
7	SO2 <= 1,459 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by continuous emission monitoring system continuously, based on any 60 minute period (See U1 OS Summary Ref. #1 for CEM requirements). [N.J.A.C. 7:27-22.16(a)]	SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously and stack test results (See U1 OS Summary Ref. #1for CEM requirements). [N.J.A.C. 7:27-22.16(a)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. (See U1 OS Summary Ref. #1 for EEMPR submittal requirements). [N.J.A.C. 7:27-22.16(a)]
~~8~~	~~TSP <= 456 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Stack Emission Testing. (See U1 OS Summary Ref. #4 for stack testing requirements).[N.J.A.C. 7:27-22.16(a)].~~	~~TSP: Recordkeeping by stack test results at the approved frequency (See U1 OS Summary Ref. #4 for stack testing requirments). [N.J.A.C. 7:27-22.16(a)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule (See U1 OS Summary Ref. #4 for stack testing requirements). [N.J.A.C. 7:27-22.16(a)]~~
9	PM-10 (Total) <= 227.2 lb/hr. [N.J.A.C. 7:27-22.16(a)]	PM-10 (Total): Monitored by stack emission testing at the approved frequency, based on the average of three Department validated stack test runs See stack testing requirement at U1 OS Summary Ref #4. [N.J.A.C. 7:27-22.16(a)]	Other: See stack testing requirement at U1 OS Summary Ref #4.[N.J.A.C. 7:27-22.16(a)].	Other (provide description): As per the approved schedule. See stack testing requirement at U1 OS Summary Ref #4. [N.J.A.C. 7:27-22.16(a)]
~~10~~	~~Maximum emission rate from NOx Emissions Averaging Plan. NOx (Total) <= 0.4 lb/MMBTU. [N.J.A.C. 7:27-19.14]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on one calendar day. (See U1 OS Summary Ref. # 1 for CEM requirements). PSEG must comply with the requirements of the PSEG's NOx Emissions Averaging Plan as approved and modified by the Department. [N.J.A.C. 7:27-19.14]~~	~~Other: Recordkeeping by strip chart or round chart and data acquisition (DAS) system / electronic data storage continuously as well as stack test results (See U1 OS Summary Ref. #s 1, 2, 3 & 4 for CEM and stack testing requirements).[N.J.A.C. 7:27-19.14].~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): On or before every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal.~~ ~~Stack Test-Submit protocol, conduct test and submit results: As per the approved schedule. (See U1 OS Summary Ref. #s 1, 2, 3 & 4 for CEM and stack testing requirements). PSEG must comply with the requirements of the PSEG's NOx Emissions Averaging Plan as approved and modified by the Department. [N.J.A.C. 7:27-19.14]~~
~~11~~	~~Fuel sample and calculate a 4 quarter weighted average for arsenic, beryllium, cadmium, chromium VI, lead, manganese, mercury, nickel, phosphorous and selenium. The sampling analysis and reporting requirement is required only in calendar quarters in which No. 6 fuel oil is burned. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Monitored by fuel sampling (e.g. oil) each month during operation on #6 fuel oil, based on the averaging period as per Department approved test method. Monthly samples shall be composited quarterly and analyzed by a certified lab.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by certified lab analysis results quarterly: once per quarter; quarters shall begin on January 1, April 1, July 1, and October 1 of each year. [N.J.A.C. 7:27-22.16(o)]~~	~~Submit a report: Every quarter (three months) beginning on the first of the month of the first full quarter following the effective date of the approved permit. Quarters shall begin on January 1, April 1, July 1, and October 1 of each year. Submit to the Bureau of Air Quality Evaluation quarterly reports per N.J.A.C. 7:27-22.18 and 22.19. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
12	NOx (Total) <= 2 lb/MW-hr when combusting # 6 fuel oil. This limit will become operative on and after May 1, 2015. [N.J.A.C. 7:27-19.4(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a calendar day (in ozone season) or 30 day rolling (at other times) average. [N.J.A.C. 7:27-19.15(a)1]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-19.19(a)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): On or before every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal . [N.J.A.C. 7:27-22.16(o)]
13	No. 6 fuel oil can only be fired during times when natural gas is curtailed. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U2 Utility boiler - coal, natural gas, or No. 6 fuel oil fired (6,600 MMBTU/hr)**

Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Within sixty days of entry of the Amendment to the Consent Decree, PSEG Fossil shall submit an application to NJDEP to modify its existing Title V Permit(s), to include a schedule for all performance, operational, maintenance, and control technology requirements established by this Amendment, including but not limited to Emission Rates and fuel limitations. Within three months after commencement of operation of each pollution control device and implementation of the measures in Section III of this Amendment, PSEG Fossil shall submit an application to modify its Title V Permit(s) to reflect the requirements of the Consent Decree, including but not limited to the new Emission Rates, limits on fuel use, and operation, maintenance, and optimization requirements of the Consent Decree. Reference: Consent Decree paragraph 117. [N.J.A.C. 7:27-22.16(a)]	None.	None.	Submit documentation of compliance: As per the approved schedule. PSEG Fossil shall submit a proposed modification to its Title V permit(s) and applications to reflect the new Emission Rates pursuant to Section IV (Emission Reduction and Controls) and, to the extent applicable, the surrender of allowances under Section V (Allowances, Credits) of the Consent Decree. Reference: Consent Decree paragraph 117. [N.J.A.C. 7:27-22.16(a)]
2	As required by Paragraph 155 of the Consent Decree, within 180 days after completing construction of each control technology, PSEG Fossil must conduct performance tests and submit performance test reports that demonstrate compliance with all the Emission Rates in the Consent Decree. Performance test reports shall be submitted to both EPA and NJDEP. This requirement shall apply solely to the Hudson Generating Station. [N.J.A.C. 7:27-22.16(a)]	None.	None.	Submit documentation of compliance: As per the approved schedule. As required by Paragraph 155 of the Consent Decree, within 180 days after completing construction of each control technology, PSEG Fossil must conduct performance tests and submit performance test reports that demonstrate compliance with all the Emission Rates in the Consent Decree. Performance test reports shall be submitted to both EPA and NJDEP. [N.J.A.C. 7:27-22.16(a)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
17	By no later than December 31, 2010, PSEG Fossil shall install and commence operation of an FGD at Hudson Unit 2 in accordance with the approved design parameters approved by EPA and NJDEP unless it has completed Shut Down pursuant to paragraphs 98b - 98c of the Amended Consent Decree. The installation of the FGD shall be completed in accordance with the following FGD milestones: Award major equipment orders: June 4, 200 Delivery of OEM design package: January 7, 2008 Commencement of Construction: April 7, 2008 Commencement of tie-in outage: September 15, 2010 Commencement of FGD operation: 14 days after Unit is synchronized with any utility electric distribution system following the tie-in outage. Beginning on December 31, 2010, PSEG Fossil shall operate the FGD at Hudson Unit 2 to achieve and maintain SO2 Emission Rates of no greater than 0.150 lb/MMBtu, based on a 30-Day Rolling Average Emission Rate, and 0.250 lb/MMBtu, based on a 24-Hour Emission rate. Reference: Consent Decree Paragraph 53. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~18~~	~~PSEG Fossil may install technology other than the FGD system described above in satisfaction of the obligations of the Consent Decree if the alternative technology achieves the same or better SO2 Emission Rates as required of the FGD systems and is approved in writing by EPA and NJDEP in advance of the installation of the alternative technology.~~ ~~Reference: Consent Decree paragraph 58. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
19	Upon the commencement of operation of an FGD at Hudson Unit 2, PSEG Fossil shall only burn coal that has a monthly average sulfur content of no greater than 2.00% at Hudson Unit 2. The monthly average sulfur content shall be determined in accordance with the New Jersey permit for Hudson Unit 2. Reference: Consent Decree paragraph 59b. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
20	~~In calculating the 24-Hour NOx Emission Rate at Hudson Unit 2, PSEG Fossil shall exclude:~~ ~~(a) for a Unit that has ceased firing fossil fuel, the period of time, not to exceed eight (8) hours, from the restart of that Unit to the time that the Unit is either fired with coal or synchronized with a utility electric distribution system; and~~ ~~(b) for a Unit that is to be shut down, the period of time in which the Unit is no longer sychronized with any utility electric distribution system, and is no longer fired with coal.~~ ~~Reference: Consent Decree paragraph 65. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~21~~	~~At least 9 months prior to the commencement of operation of the Hudson Unit 2 SCR required by the Consent Decree, and in accordance with N.J.A.C. 7:27-22.18, PSEG Fossil shall submit to EPA and NJDEP for review and approval a proposed protocol for determining NOx Emission Rates.~~ ~~Reference: Consent Decree paragraph 66. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
22	By January 1, 2007, PSEG Fossil shall commence year-round operation of an SNCR at Hudson Unit 2 until it either installs and operates a SCR at Hudson Unit 2, or Shuts Down Hudson Unit 2 in accordance with paragraphs 98b of the Consent Decree. By no later than December 31, 2010, PSEG Fossil shall install and commence year-round operation of an SCR at Hudson Unit 2 to achieve and maintain NOx Emission Rates of no greater than 0.100 lb/MMBtu, based on a 30-Day Rolling Average Emission Rate, and 0.150 lb/MMBtu, based on a 24-Hour Emission Rate unless it has completed Shuts Down pursuant to Paragraphs 98b - 98c of the Consent Decree. The installation of the SCR shall be completed in accordance with the following SCR milestones: Award major equipment orders: June 4, 2007 Delivery of OEM design package: January 7, 2008 Commencement of Construction: April 7, 2008 Commencement of tie-in outage: September 15, 2010 Commencement of SCR operation: 14 days after Unit is synchronized with any utility electric distribution system following the tie-in outage. Reference: Consent Decree Paragraph 68 SNCR is defined as a selective non-catalytic reduction system for the reduction of emission of NOx. Reference: Amendment to Consent Decree Paragraph 3.g. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
27	On and after May 1, 2007, PSEG Fossil shall operate the Hudson Unit 2 SCR (or approved alternative technology approved pursuant to paragraph 73 of the Consent Decree) at all times that Hudson Unit 2 operates, except that PSEG Fossil need not operate an SCR: (a) for a Unit that has ceased firing fossil fuel, during the period of time, not to exceed eight (8) hours, from the start of that Unit to the time that the Unit is fired with coal; and (b) for a Unit that is to be shut down, during the period of time that the Unit is no longer synchronized with any utility electric distribution system and is no longer fired with coal. Reference: Consent Decree paragraph 63. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~28~~	~~PSEG Fossil may install technology other than SCRs in satisfaction of the NOx control obligations of the Consent Decree if the alternative technology is designed to achieve the same or better Removal Efficiency and achieves the same or better NOx Emission Rates as required of the SCR systems, and is approved in writing by EPA and NJDEP prior to the installation of the alternative NOx control technology.~~ ~~Reference: Consent Decree paragraph 73. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
31	By no later than December 31, 2010, PSEG Fossil shall install and commence operation of a baghouse at Hudson Unit 2, in accordance with the design parameters approved by EPA and NJDEP to achieve and maintain a PM Emission Rate of no more than 0.0150 lb/MMBtu unless it has completed Shut Down pursuant to paragraphs 98b and 98c of the Consent Decree. The installation of the baghouse shall be completed in accordance with the following baghouse milestones: Award major equipment orders: June 4, 200 Delivery of OEM design package: January 7, 2008 Commencement of construction: April 7, 2008 Commencement of tie-in outage: September 15, 2010 Commencement of baghouse operation : 14 days after the Unit is synchronized with any utility distribution system following the tie-in outage. PSEG Fossil shall operate the Hudson Unit 2 baghouse at all times that the Unit it serves is combusting coal. PSEG Fossil shall operate the existing Hudson Unit 2 ESP and fly ash conditioning system beginning January 1, 2007, and continuing until the Unit is either permanently Shut Down or retrofitted with a baghouse to control PM emissions." Reference: Consent Decree paragraphs 80. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~42~~	~~PSEG Fossil shall also determine the mercury content of representative samples of the coal being burned during mercury stack testing each year, and shall correlate the amount of mercury in the coal to the amount being emitted to the air for that year. The coal sampling and analysis conducted during these annual stack tests may also serve as the monthly (or quarterly) mercury sampling and analysis for that month (or quarter) in which the annual test was conducted. Reference: Consent Decree paragraph 153 [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~Other (provide description): Not Applicable PSEG Fossil shall report the results of its mercury coal analyses to EPA and NJDEP, in the periodic reports to be submitted in accordance with Section IX (Reporting and Recordkeeping) of the Consent Decree. Reference: Consent Decree paragraph 154. [N.J.A.C. 7:27-22.16(a)]~~
43	Compliance shall be determined by continuous emission monitoring for SO2, NOx, CO2, CO and O2 as per the requirements specified in 40 CFR 75 or 40 CFR 60, as applicable. [N.J.A.C. 7:27-22.16(e)]	Other: Monitored by continuous emission monitoring system continuously. Comply with approved protocols and the requirements of 40 CFR 75.[N.J.A.C. 7:27-22.16(e)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously Comply with the approved protocols and the requirements of 40 CFR 75. [N.J.A.C. 7:27-22.16(e)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal to the Department for review and approval. [N.J.A.C. 7:27-22.16(o)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
44	Conduct a comprehensive stack test at emission point PT2 within 180 days of operating permit to determine emission rates and concentrations for CO, VOC (Total), SO2, NOx, H2SO4, Polycyclic Organic Matter (POM), Ammonia, Phosphorus, Selenium and 2,3,7,8-TCDD toxic equivalent. When conducting stack emission testing, a minumum of three one-hour test runs shall be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. The stack tests shall be subject to the following: b) three consecutive one hour tests shall be conducted, c) one test run will be conducted during soot blowing operations. The procedure for soot blowing shall be included in the test protocol required in this permit, d) the coal used during compliance tests shall represent, to the extent reasonable, the worst case conditions for emissions. e) The POM emissions of the following 16 constituents shall be speciated and reported: naphthalene, acenaphthene, acenaphthylene, fluorene, phenanthrene, anthracene, pyrene, benzo(ghi)perylene, Benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene. [N.J.A.C.7:27-22.16(e)] and [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing once initially. Where an applicable requirement requires stack testing for compliance demonstration, compliance will be based on any 60-minute period unless otherwise indicated in the applicable requirement. The facility may propose in a stack testing protocol the use of the CEM monitors to determine the SO2, CO and NOx concentrations during stack testing. Any use of the CEMs for stack testing shall only be permitted upon prior approval of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results once initially. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule Stack Test - Submit a protocol, conduct stack tests, submit results: As per the approved schedule. . Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 60 days from the date of the approved initial operating permit and by every fifth anniversary of that date thereafter. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. The stack test must be conducted within 180 days of operating permit approval. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall report lbs/hour, lbs/MM Btu, and ppmvd at 7% O2 (for CO and VOC only). [N.J.A.C. 7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
45	Conduct a comprehensive stack test at emission point PT2 by 18 months prior to the expiration date of this operating pemit to determine emission rates and concentrations for CO, VOC (Total), SO2, NOx, H2SO4, Polycyclic Organic Matter (POM), Ammonia, Phosphorus, Selenium and 2,3,7,8-TCDD toxic equivalent. When conducting stack emission testing, a minumum of three one-hour test runs shall be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. The stack tests shall be subject to the following: a) three consecutive one hour tests shall be conducted, b) one test run will be conducted during soot blowing operations. The procedure for soot blowing shall be included in the test protocol required in this permit, c) the coal used during compliance tests shall represent, to the extent reasonable, the worst case conditions for particulate emissions. d) The POM emissions of the following 16 constituents shall be speciated and reported: naphthalene, acenaphthene, acenaphthylene, fluorene, phenanthrene, anthracene, pyrene, benzo(ghi)perylene, Benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene. [N.J.A.C.7:27-22.16(e)] and [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing every 5 years. Where an applicable requirement requires stack testing for compliance demonstration, compliance will be based on any 60-minute period unless otherwise indicated in the applicable requirement. Stack testing shall be conducted by 18 months prior to the operating permit expiration date. The facility may propose in a stack testing protocol the use of the CEM monitors to determine the CO, SO2 and NOx concentrations during stack testing. Any use of the CEMs for stack testing shall only be permitted upon prior approval of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results every 5 years. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 30 months from the date of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall report lbs/hour, lbs/MM Btu, and ppmvd at 7% O2 (for CO and VOC only). [N.J.A.C.7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
46	Conduct a comprehensive stack test (when firing coal) at emission point PT2 by July 31 each year, to demonstrate compliance with particulate matter (including front and back half condensibles) emission limits.When conducting stack emission testing, a minumum of three one-hour test runs shall be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. The stack tests shall be subject to the following: a) The tests for TSP shall use 40 CFR Part 60 Appendix A Method 5. b) The tests for PM-10 shall use 40 CFR Part 51 Appendix M Method 202 and Method 201 or 201A. c) The TSP and PM-10 emission rates shall be calculated in accordance with 40 CFR 60.8(f). d) Three consecutive one hour tests shall be conducted, e) One test run will be conducted during soot blowing operations. The procedure for soot blowing shall be included in the test protocol required in this permit, f) the coal used during compliance tests shall represent, to the extent reasonable, the worst case conditions for TSP and PM-10 emissions. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing annually, based on the average of three tests. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results annually. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 and EPA annually. If acceptable to BTS, protocols approved prior to operating permit approval may be used. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. The stack test must be conducted annually before before July 31. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall report lbs/hour and lbs/MM BTU. [N.J.A.C.7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
48	Conduct a comprehensive stack test at emission point PT2 within 180 days from the date of the approved Operating Permit to determine emission rates for NOx and CO and demonstrate compliance with the particulate matter (including front and back half condensibles) emission limits. The test shall be conducted while firing natural gas. When conducting stack emission testing, a minimum of three one-hour test runs shall be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing once initially. Stack test shall be conducted for NOx and CO for the natural gas firing scenarios. (See Applicable Requirement). Where an applicable requirement requires stack testing for compliance demonstration, compliance will be based on any 60-minute period unless otherwise indicated in the applicable requirement. The facility may propose in a stack testing protocol the use of the CEM monitors to determine the CO and NOx concentrations during stack testing. Any use of the CEMs for stack testing shall only be permitted upon prior approval of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results once initially. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 60 days from the date of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall be reported in lb/hr, lb/MMBTU (HHV) and ppmvd @ 7% O2 (CO only) . [N.J.A.C.7:27-22.16(a)], [N.J.A.C.7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
49	Conduct a comprehensive stack test at emission point PT2 by 18 months prior to the expiration date of the approved Operating Permit to determine emission rates for NOx and CO. Testing shall be conducted when firing natural gas. When conducting stack emission testing, a minimum of three one-hour test runs shall be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing every 5 years, based on any 60 minute period. The facility may propose in a stack testing protocol the use of the CEM monitors to determine the CO and NOx concentrations during stack testing. Any use of the CEMs for stack testing shall only be permitted upon prior approval of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results every 5 years. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 30 months from the date of the approved operating permit. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall be reported in lb/hr, lb/MMBTU (HHV) and ppmvd @ 7% O2 (CO only). [N.J.A.C.7:27-22.16(a)], [N.J.A.C.7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
50	Conduct a comprehensive stack test at emission point PT2 to demonstrate compliance with the NOx CO, VOC, TSP and PM10 emission limits. The stack test must be performed within 180 days of the initial use of #6 fuel oil and annually thereafter. When conducting stack emission testing, a minimum of three one-hour test runs shall be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing annually, based on any 60 minute period. Stack test shall be conducted for NOx, CO, VOC, TSP & PM-10. Compliance will be based on the average of three one-hour tests for TSP. [N.J.A.C. 7:27-22.16(o)]	Recordkeeping by stack test results annually (after initial use of #6 fuel oil) and certified lab analysis. See Applicable Requirement. [N.J.A.C. 7:27-22.16(o)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625. For #6 fuel oil, stack test protocol shall be submitted within 60 days of initial use of #6 fuel oil and annually thereafter. The stack test must be performed within 180 days of the initial use of #6 fuel oil and annually thereafter. Within 30 days of protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report must be submitted to BTS and a certified summary test report, as described in the protocol, must be submitted to the Regional Enforcement Office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall be reported in lb/hr, lb/MMBTU (HHV) and ppmvd @ 7% O2 (for VOC and CO only) and fuel sulfur content shall be reported in weight percent. [N.J.A.C.7:27-22.16(a)], [N.J.A.C.7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]
~~51~~	~~The permittee shall maintain records of each shipment of coal received at Hudson Generating Station for burning in Unit No. 2. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by review of fuel delivery records per delivery. [N.J.A.C. 7:27-22.16(o)]~~	~~Recordkeeping by manual logging of parameter once per bulk fuel shipment. The records shall include name and address of supplier, date and quantity received and sulfur content. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
58	Adjust the combustion process in accordance with N.J.A.C.7:27-19.16 by May 1 of each calendar year or within seven days of the period of operation after May 1, if not operated between January 1 and May 1 of that year. Record NOx and CO conc. after each adjustment and the O2 conc. at which NOx and CO were measured. [N.J.A.C. 7:27-19.4(c)] [N.J.A.C. 7:27-16.8(c)]	Monitored by continuous emission monitoring system continuously, based on an instantaneous determination. [N.J.A.C. 7:27-16.8(c)]	Recordkeeping by manual logging of parameter or storing data in a computer data system annually in a permanently bound logbook or readily accessible computer memory containing the following information for each adjustment: 1. The date of the adjustment and the times at which it began and ended; 2. The name, title and affiliation of the person who made the adjustment; 3. The NOx and CO concentration in the effluent stream, in ppmvd, before and after each adjustment was made; 4. The concentration of O2 (in percent dry basis) at which the CO and NOx concentrations were measured pursuant to the steps 3 a above; 5. A description of any corrective action taken; 6. Results from any subsequent tests performed after taking any corrective action, including concentrations and converted emission values in pounds per million BTU (lb/MMBtu); 7. The type and amount of fuel used over the 12 months prior to the annual adjustment; and 8. Any other information which the Department or EPA has required as a condition of approval of any permit or certificate issued for the equipment or source operation. [N.J.A.C. 7:27-19.16]	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~59~~	~~Start-up Period: The emission unit is exempt from emission limitations pursuant to N.J.A.C. 7:27-22.16 during startup periods. Exemptions from emission limitations during each start-up period, of the boiler or the steam-turbine generator, shall not exceed the time required for the unit to reach a steady state load of not less than 200 MWe (net), or 16 hours, whichever occurs first. Start-up, except as it pertains to the operation of the SCR, shall be defined as the period of time that begins with the initial firing of fuel in the boiler, or the start-up of the steam-turbine-generator, and ends when the unit reaches a steady-state load of not less than 200 MWe (net) for at least 30 minutes. Steady-state load is achieved when the net electrical power output from the steam electric generating unit does not vary by more than 10% for a period of not less than a 1/2 hour. Startup as it pertains to operation of the SCR is defined in the immediately following Ref #. [N.J.A.C. 7:27-22.16(e)]~~	~~Start-up Period: Monitored by hour/time monitor continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~Start-up Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. PSE&G shall maintain records of each start-up period beginning and ending times. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
60	Start-up Period: Start-up, as it pertains to the operation of the SCR after December 31, 2010, is defined as the period of time, not to exceed eight (8) hours, from the restart of the Unit to the time that the Unit is fired with coal. This provision only pertains to the NOx limitations associated with the Required Periods of Operation of the SCR. Other limitations and operating periods are subject to the start up provisions of the immediately previous Ref #. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	Start-up Period: Monitored by hour/time monitor continuously. [N.J.A.C. 7:27-22.16(o)]	Start-up Period: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~61~~	~~Fuel Transfer Period: The emission unit is exempt from emission limitations pursuant to N.J.A.C. 7:27-16 during fuel transfer periods. Exemptions from emission limitations during fuel transfer periods shall not exceed 6 hours for each fuel transfer operation. Fuel transfer shall be defined as the period of time from initiation of the fuel transfer process in the boiler until the cessation of the process. [N.J.A.C. 7:27-22.16(e)]~~	~~Fuel Transfer Period: Monitored by hour/time monitor continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~Fuel Transfer Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. PSE&G shall maintain records of each fuel transfer period beginning and ending times. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
~~62~~	~~Shutdown Period: The emission unit is exempt from emission limitations pursuant to N.J.A.C. 7:27-22.16 during shutdown periods. Exemptions from emission limitations during shutdown periods shall not exceed one hour. Shutdown, except as it pertains to the SCR, shall be defined as the period of time that begins when unit output falls below 150 MWe (net) and ends when fuel is no longer being burned in the furnace. Shutdown as it pertains to the SCR is defined in the immediately following Ref #. [N.J.A.C. 7:27-22.16(e)]~~	~~Shutdown Period: Monitored by hour/time monitor continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~Shutdown Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. The permittee shall maintain records of each shut-down period beginning and ending times. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
63	Shutdown Period: Shutdown, as it pertains to the operation of the SCR after December 31, 2010, is defined as the period of time that the Unit is no longer synchronized with any electric utility distribution system and is no longer fired with coal. This provision only pertains to the NOx limitations associated with the Required Periods of Operation of the SCR. Other limitations and operating periods are subject to the shutdown provisions in the immediately preceding Ref #. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
64	The permittee shall operate and maintain low NOx (overfire air) burners on the boiler. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
65	Prior to the commencement of operation of the baghouse (CD 27), the electrostatic precipitator (ESP) must operate at all times that Hudson Unit 2 is burning coal. The ESP need not be energized when operating with only natural gas or No. 6 fuel oil. Upon commencement of operation of the baghouse (CD 27), the ESP may be operated at the discretion of the permittee. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
~~66~~	~~Ammonia: To enhance the collection efficiency of the ESP when burning coal, ammonia shall be injected, when needed, at a rate no more than 12 ppmvd. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~67~~	~~Sulfur Trioxide: To enhance the collection efficiency of the ESP when burning coal, sulfur trioxide shall be injected, when needed, at a rate of not more than 20 ppmv. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~68~~	~~CO <= 2,452 tons/yr. Maximum emission rate, based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Monitored by continuous emission monitoring system annually, based on a 12 calendar month period. Calculations shall be based on the calendar year from January 1st through December 31st. Cumulative annual mass emissions derived from integrated continuous emission monitor and volumetric flow meter values shall be used to demonstrate compliance with this condition. [N.J.A.C. 7:27-22.16(e)]~~	~~CO: Recordkeeping by data acquisition system (DAS) / electronic data storage daily. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit a report: Annually to the Department which lists the total annual emissions of each pollutant specified in this permit. The report shall be submitted to the Regional Enforcement Officer within thirty (30) calendar days after the end of each calendar year. [N.J.A.C. 7:27-22.16(e)]~~
~~69~~	~~SO2 <= 56,394 tons/yr. Maximum emission rate, based on the preconstruction permit. This limitation expires on December 31, 2005. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Monitored by continuous emission monitoring system annually, based on a 12 calendar month period. Calculations shall be based on the calendar year from January 1st through December 31st. Cumulative annual mass emissions derived from integrated continuous emission and volumetric flow meter shall be used to demonstrate compliance with this condition. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage daily. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit a report: Annually to the Department which lists the total annual emissions of each pollutant specified in this permit. The report shall be submitted to the Regional Enforcement Officer within thirty (30) calendar days after the end of each calendar year. [N.J.A.C. 7:27-22.16(e)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~70~~	~~SO2 <= 29,984 tons/yr in any calendar year shall be calculated for Hudson Unit 2, Mercer Unit 1, and Mercer Unit 2 collectively, after December 31, 2005. This is based on the preconstruction permit.~~ ~~If emissions from Hudson Unit 2, Mercer Unit 1, and Mercer Unit 2, collectively exceed more than 16,444 tons of NOx in any calendar year after December 31, 2005, or more than 29,948 tons of SO2 in any calendar year after December 31, 2006, then the covenants not to sue in Paragraphs number 121 and 122 of the Consent Decree shall not apply to any physical change or change in the method of operation at these Units within the five-year period preceding the exceedance. A copy of the Consent Decree between PSEG Fossil, NJDEP and USEPA is attached. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Monitored by continuous emission monitoring system continuously, based on one calendar year See CEM requirements at U2 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage annually See CEM requirements at U2 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit notification: As per the approved schedule in the Consent Decree. Also, see CEM requirements at U2 OS Summary Ref # 43.~~ ~~Submit the values in tons/year for SO2 to the Chief, Bureau of Operating Permits and to Regional Enforcement Officer, NRO of the Department. [N.J.A.C. 7:27-22.16(e)]~~
71	SO2: <= 0.250 lb/MMBTU based on a 24-hour block average (no trailing zero implied) that shall be determined by dividing the total pounds of pollutant by the total million Btu of heat input (lb/MMBtu) for a 24-hour operating day. A new 24-hour emission rate shall be calculated for each new operating day. PSEG Fossil shall exclude the pounds of pollutant emissions and million BTU of heat input (lb/mmBTU) pertaining to the period of time in which the Unit is not fired with coal or oil. This emission rate limitation shall take effect on December 31, 2010. This limitation shall not apply during the shakedown period after initial start-up. The shakedown period shall be defined as the 90 operating day period beginning with the initial operation of the FGD. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by continuous emission monitoring system continuously, based on one calendar day , excluding periods when Hudson Unit No. 2 is not fired with coal or oil. See CEM requirements at U2 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]	SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See CEM requirements at U2 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]	Other (provide description): As per the approved schedule. See CEM requirements at U2 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
72	SO2: <= 0.150 lb/MMBTU based on a 30-day rolling average (no trailing zero implied) that shall be determined by calculating the emission rate for an operating day and then arithmetically averaging that emission rate with the emission rates for the previous twenty-nine (29) operating days. A new 30-day rolling average shall be calculated for each new operating day. The permittee may exclude the period, not to exceed two (2) hours, from the restart of that Unit to the time that the Unit is fired with coal or oil. This emission rate limitation shall take effect on December 31, 2010. This limitation shall not apply during periods when Hudson Unit No. 2 is not fired with coal or oil. This limitation shall also not apply during a shakedown period after initial operation of the FGD. The shakedown period shall be defined as the 90 operating day period beginning with the initial operation of the FGD. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(a)]	SO2: Monitored by continuous emission monitoring system continuously, based on a 30 day rolling average , excluding periods when Hudson Unit No. 2 is not fired with coal or oil. See CEM requirements at U2 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]	SO2: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See CEM requirements at U2 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]	Other (provide description): As per the approved schedule. See CEM requirements at U2 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]
~~73~~	~~SO2 <= 5,547 tons/yr for calendar year 2007 Reference: Consent Decree paragraph 98a. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~74~~	~~SO2 <= 5,270 tons/yr for calendar years 2008-2010. Reference: Consent Decree paragraph 98a. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~75~~	~~VOC (Total) <= 985 tons/yr. Maximum emission rate, based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~VOC (Total): Monitored by calculations annually, based on a 12 calendar month period. Annual emissions of total VOC shall be calculated as follows: [tons coal burned x (26.4 MMBTU/ton for tradional coal or 18 MMBTU/ton for Ultra low sulfur coal) x 0.04 lb/MM BTU x 1/2000 lbs/ton] + [MM cu. ft. gas burned x 1030 BTU/cu. ft x 0.0017 lb/MM BTU x 1/2000 lbs/ton] + [MM gals oil burned x 145,238 BTU/gal x 0.007 lb/MM BTU x 1/2000 lbs/ton]. [N.J.A.C. 7:27-22.16(e)]~~	~~VOC (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage daily. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit a report: Annually to the Department which lists the total annual emissions of each pollutant specified in this permit. The report shall be submitted to the Regional Enforcement Officer within thirty (30) calendar days after the end of each calendar year. [N.J.A.C. 7:27-22.16(e)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~76~~	~~TSP <= 2,480 tons/yr. Maximum emission rate, based on the preconstruction permit. This limitation will expire on December 31, 2010. [N.J.A.C. 7:27-22.16(a)]~~	~~TSP: Monitored by calculations annually, based on a 12 calendar month period. Annual emissions of TSP shall be calculated as follows: [tons coal burned x (26.4 MMBTU/ton for tradional coal or 18 MMBTU/ton for Ultra low sulfur coal) x 0.10 lb/MM BTU x 1/2000 lbs/ton] + [MM cu. ft. gas burned x 1030 BTU/cu. ft x 0.005 lb/MM BTU x 1/2000 lbs/ton] + [MM gals oil burned x 145,238 BTU/gal x 0.031 lb/MM BTU x 1/2000 lbs/ton]. [N.J.A.C. 7:27-22.16(e)]~~	~~TSP: Recordkeeping by data acquisition system (DAS) / electronic data storage daily. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit a report: Annually to the Department which lists the total annual emissions of each pollutant specified in this permit. The report shall be submitted to the Regional Enforcement Officer within thirty (30) calendar days after the end of each calendar year. [N.J.A.C. 7:27-22.16(e)]~~
77	Particulate Emissions: <= 0.0150 lb/MMBtu (no trailing zero implied). This emission rate limitation shall take effect on December 31, 2010. This limitation shall not apply during a shakedown period after initial operation of the baghouse. The shakedown period shall be defined as the 90 operating day period beginning with the initial operation of the baghouse. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(a)]	Other: See stack testing requirements in Ref #s 46 and 50. The reference method for determining PM emission rates shall be Method 5 in 40 C.F.R. Part 60, Appendix A, Method 5.[N.J.A.C. 7:27-22.16(e)].	Other: See stack testing requirements in Ref #s 46 and 50.[N.J.A.C. 7:27-22.16(e)].	Stack Test - Submit protocol, conduct test and submit results: Annually. PSEG Fossil shall report to EPA and NJDEP the results of its stack tests within 60 days of conducting such tests, unless NJDEP provides PSEG Fossil with additional time in which to submit such test results. [N.J.A.C. 7:27-22.16(e)]
~~78~~	~~TSP <= 372 tons/yr. Annual emission limit based on 30-day rolling average and annual gross heat input. This limitation takes effect on December 31, 2010. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~79~~	~~PM-10 (Total) <= 5,122 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~80~~	~~NOx (Total) <= 16,444 tons/yr in any calendar year shall be calculated for Hudson Unit 2, Mercer Unit 1, and Mercer Unit 2 collectively, after December 31, 2005. This is based on the preconstruction permit.~~ ~~If emissions from Hudson Unit 2, Mercer Unit 1, and Mercer Unit 2, collectively exceed more than 16,444 tons of NOx in any calendar year after December 31, 2005, or more than 29,948 tons of SO2 in any calendar year after December 31, 2006, then the covenants not to sue in Paragraphs number 121 and 122 of the Consent Decree shall not apply to any physical change or change in the method of operation at these Units within the five-year period preceding the exceedance. A copy of the Consent Decree between PSEG Fossil, NJDEP and USEPA is attached. [N.J.A.C. 7:27-22.16(e)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on one calendar year. See CEM requirements at U1 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]~~	~~NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage annually. [N.J.A.C. 7:27-22.16(e)]~~	~~Submit notification: As per the approved schedule in the Consent Decree.~~ ~~Submit the values in tons/year for NOx (Total), to the Chief, Bureau of Operating Permits and to Regional Enforcement Officer, NRO of the Department. [N.J.A.C. 7:27-22.16(e)]~~
81	NOx (Total): <= 0.150 lb/MMBtu based on a 24-hour block average (no trailing zero implied) that shall be determined by dividing the total pounds of pollutant by the total million Btu of heat input (lb/MMBtu) for a 24-hour operating day. A new 24-hour emission rate shall be calculated for each new operating day. This emission rate limitation shall take effect on December 31, 2010. This limitation shall not apply during periods of start up and shutdown as it pertains to the operation of the SCR. This limitation shall also not apply during a shakedown period after initial operation of the SCR. The shakedown period shall be defined as the 90 operating day period beginning with the initial operation of the SCR. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on one calendar day , excluding periods of start-up or shutdown with regard to the SCR. See CEM requirements at U1 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See CEM requirements at U1 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
82	NOx (Total): <= 0.100 lb/MMBTU based on a 30-day rolling average (no trailing zero implied) that shall be determined by calculating the emission rate for an operating day and then arithmetically averaging that emission rate with the emission rates for the previous twenty-nine (29) operating days. A new 30-day rolling average shall be calculated for each new operating day. This emission rate limitation shall take effect on December 31, 2010 This limitation shall not apply during periods of start up and shutdown as it pertains to the operation of the SCR. This limitation shall also not apply during a shakedown period after initial operation of the SCR. The shakedown period shall be defined as the 90 operating day period beginning with the initial operation of the SCR. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a 30 day rolling average , excluding periods when Hudson Unit No. 2 is not fired with coal or oil. See CEM requirements at U1 OS Summary Ref # 43. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See CEM requirements at U1 OS Summary Ref # 43. [N.J.A.C. 7:27-21.16(e)]	None.
~~83~~	~~NOx (Total) <= 3,486 tons/yr for calendar years 2007-2010. Reference: Consent Decree paragraph 98a. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~84~~	~~Diphenylhydrazine (1,2-) <= 0.05 tons/yr. Maximum emission rate, based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~85~~	~~Ethane <= 75 tons/yr. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~	~~None.~~	~~None.~~
~~86~~	~~Ammonia <= 161 tons/yr. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~	~~None.~~	~~None.~~
~~87~~	~~Chloroacetophenone (2-) <= 0.01 tons/yr. Maximum emission rate, based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~88~~	~~7,12-Dimethylbenz(a)anthracene <= 0.13 tons/yr. Maximum emission rate, based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
124	Mercury Emissions <= 3 milligrams per MW-hr. On and after December 15, 2007, the emissions of mercury shall not exceed 3.00 milligram per megawatt of net electricity generation, based on an annual weighted average of all valid stack emission tests performed for four consecutive quarters weighted by megawatt hours produced each quarter. The annual weighted average mercury emissions shall be calculated in accordance with the formula specified in the definition of "annual weighted average" set forth at N.J.A.C. 7:27-27.1. OR In lieu of complying with the above, on and after December 15, 2007, the permittee may comply with the following requirement: The reduction efficiency for control of mercury emissions of the air pollution control apparatus for control of mercury shall be at least 90 percent based on the annual weighted average of all valid stack emission tests performed for four consecutive quarters weighted by megawatt hours produced each quarter. The annual weighted average mercury reduction efficiency shall be calculated in accordance with the formula specified in the definition of "annual weighted average" set forth at N.J.A.C. 7:27-27.1. [N.J.A.C. 7:27-27.7(a)]	Mercury Emissions: Monitored by stack emission testing quarterly: once per quarter; quarters shall begin on January 1, April 1, July 1, and October 1 of each year. On and after December 15, 2007, the permittee shall conduct stack emission testing every quarter to measure mercury in the gas stream in the stack in accordance with a stack test protocol approved by the Department. The stack emission test shall be conducted at the inlet of the air pollution control apparatus and simultaneously at the exit of the air pollution control apparatus to measure the mass emission if the second option of reduction efficiency requirement is adopted. [N.J.A.C.7:27-27.7(a)1} and. [N.J.A.C. 7:27-27.8]	Mercury Emissions: Recordkeeping by stack test results quarterly: once per quarter; quarters shall begin on January 1, April 1, July 1, and October 1 of each year. [N.J.A.C. 7:27-27.9]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 at least 90 calendar days prior to conducting its first quarter stack testing. There shall be at least three valid stack tests runs per quarter and at least 45 days between the stack test performed for the preceding quarter. The stack test report must be submitted to BTS within 60 calendar days after performing the stack test pursuant to N.J.A.C. 7:27-27.9(a) for that quarter to the regional air and compliance enforcement office and BTS. The test results must be certified by a licensed professional engineer or certified industrial hygienist. A summary of the test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall be reported in milligram per megawatt of net electricity generation. [N.J.A.C. 7:27-27.9 and. [N.J.A.C. 7:27-22.18]
125	PSEG Fossil shall install and commence operation of a Flue Gas Desulfurization (FGD) system (CD25) on Hudson Unit No. 2 by no later than December 31, 2010. The FGD may be operated prior to December 31, 2010. [N.J.A.C. 7:27-22.16(a)]	Other: Refer to Consent Decree Paragraphs 51, 53 and 155.[N.J.A.C. 7:27-22.16(a)].	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(e)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to Consent Decree Paragraphs 51 and 155. [N.J.A.C. 7:27-22.16(e)]

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
126	After December 31, 2010, PSEG Fossil shall operate the FGD (CD25) at all times that Hudson Unit No. 2 operates, except that PSEG Fossil need not operate the FGD when the Unit is not fired with coal or oil. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
127	By January 1, 2007, PSEG Fossil shall commence year-round operation of an SNCR on Hudson Unit 2 until it either installs and operates a SCR on Hudson Unit 2, or Shuts Down Hudson Unit 2 in accordance with applicable requirements of the Consent Decree. By no later than December 31, 2010, PSEG Fossil shall install and commence year-round operation of an SCR at Hudson Unit 2. The SCR may be operated prior to December 31, 2010. [N.J.A.C. 7:27-22.16(a)]	Other: (Consent Decree Paragraphs 155, 68 and 66)[N.J.A.C. 7:27-22.16(a)].	Recordkeeping by stack test results upon occurrence of event. [N.J.A.C. 7:27-22.16(e)]	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to U2 OS Summary Ref #2 and Ref #22 (Consent Decree Paragraphs 155 and 66). [N.J.A.C. 7:27-22.16(e)]
128	By January 1, 2007, PSEG Fossil shall commence year-round operation of an SNCR on Hudson Unit 2 until it either installs and operates a SCR on Hudson Unit 2, or Shuts Down Hudson Unit 2 in accordance with applicable requirements of the Consent Decree. By no later than December 31, 2010, PSEG Fossil shall install and commence year-round operation of an SCR at Hudson Unit 2, except that PSEG Fossil need not operate the SCR: (a) when the Unit has ceased firing fossil fuel, the period of time, not to exceed eight (8) hours from the restart of the Unit to the time that the Unit is either fired with coal or synchronized with a utility electric distribution system; and (b) when the Unit is to be shutdown, during the period of time that the Unit is no longer synchronized with any utility electric distribution system and is no longer fired with coal. [N.J.A.C. 7:27-22.16(a)]	Other: The permittee shall record the start and end times of occurrences of situations (a) and (b) described in the applicable requirement.[N.J.A.C. 7:27-22.16(a)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(a)]	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~129~~	~~For CD26, the permittee shall replace the catalyst bed as necessary to ensure that NOx emissions do not exceed the maximum permit allowable emission rate. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~130~~	~~Ammonia Slip <= 10 ppmvd @ 7% O2. Also applies when operating the SCR (CD26) or SNCR (CD20). This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: See stack testing requirements at U2 OS Summary Ref #s 44 and 45. Compliance with the ammonia limit will be based on the average of three one-hour tests.[N.J.A.C. 7:27-22.16(e)].~~	~~Other: See stack testing requirements at U2 OS Summary Ref #s 44 and 45.[N.J.A.C. 7:27-22.16(e)].~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to stack testing requirements specified in Ref # 44 and 45. [N.J.A.C. 7:27-22.16(e)]~~
~~131~~	~~Temperature at Catalyst Bed >= 500 and Temperature at Catalyst Bed <= 840 degrees F for CD26. The permittee shall not be considered in violation for any deviation from this requirement if corresponding NOx emissions are in compliance with applicable emission limits as established in this permit. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~Temperature at Catalyst Bed: Monitored by temperature instrument continuously, based on an instantaneous determination. The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications. The monitor(s) shall be ranged such that the allowable value is approximately mid-scale of the full range current/voltage output. [N.J.A.C. 7:27-22.16(e)]~~	~~Temperature at Catalyst Bed: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
132	PSEG Fossil shall install and commence operation of a baghouse on Hudson Unit No. 2 by no later than December 31, 2010. The baghouse may be operated prior to December 31, 2010. [N.J.A.C. 7:27-22.16(a)]	Other: Refer to Consent Decree Paragraphs 74, 75, 80 and 155.[N.J.A.C. 7:27-22.16(a)].	None.	Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Refer to Consent Decree Paragraphs 74, 75 and 155. [N.J.A.C. 7:27-22.16(e)]
133	After December 31, 2010, PSEG Fossil shall operate the baghouse at all times that Hudson Unit No. 2 operates, except that PSEG Fossil need not operate the baghouse when the Unit is not fired with coal or oil. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~134~~	~~The permittee shall conduct bag cleaning, maintenance, and replacement on a schedule necessary to achieve the required particulate removal efficiency as specified by the manufacturer. This is based on the preconstruction permit. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by visual determination once every 2 weeks. The permittee shall visually inspect the baghouse according to the manufacturer's recommendations once every two weeks. [N.J.A.C. 7:27-22.16(o)]~~	~~Recordkeeping by manual logging of parameter upon occurrence of event in a permanently bound logbook or readily available computer files. The permittee shall record each instance of bag cleaning and bag replacement. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~135~~	~~The SCR, FGD and Baghouse (FF) at Hudson Unit 2 must be designed as approved by EPA and NJDEP (see the PSEG's letters to the Department dated November 1, 2004; April 18, 2005, and the Attorney General's letter to PSEG dated February 10, 2005 and July 5, 2005 (See attachment). [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~136~~	~~Acid Rain:Comply with the requirements contained in the attached Acid Rain Permit. [40 CFR 72]~~	~~Other: Comply with the requirements contained in the attached Acid Rain Permit. See Appendix 1.[40 CFR 72].~~	~~Other: Comply with the requirements contained in the attached Acid Rain Permit. See Appendix 1.[40 CFR 72].~~	~~Other (provide description): As per the approved schedule , comply with the requirements contained in the attached Acid Rain Permit. See Appendix 1. [40 CFR 72]~~
137	Beginning no late than December 31, 2010, PSEG Fossil shall have installed and shall operate PM CEMS technology at Hudson Unit 2, in accordance with 40 CFR Part 60, App. B, Performance Specification 11, and App. F Procedure 2. The installation and operation of PM CEMS in no way affects the applicability of Consent Decree Paragraphs 74 or 93. Reference: Consent Decree paragraph 154a. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
138	The PM CEMS required by Consent Decree Paragraph 154a shall include a continuous particle mass monitor measuring particulate matter concentration, directly or indirectly, on an hourly average basis and a dilutent monitor used to convert the concentration to units of lb/MMBtu. PSEG Fossil shall maintain, in electronic database, the hourly average emission values of all PM CEMS in lb/MMBtu. No later than 180 days prior to the deadline for commencing operation of the PM CEMS required by Consent Decree Paragraph 154a, PSEG Fossil shall submit to EPA and NJDEP for review and approval pursuant to Paragraphs 94-98 of the Consent Decree a proposed Quality Assurance/Quality Control ("QA/QC") protocol that PSEG Fossil will follow in calibrating the PM CEMS. In its protocol, PSEG Fossil shall use 40 CFR Part 60, App. B, Performance Specification 11, and App. F Procedure 2. PSEG Fossil shall include in its QA/QC protocol a description of any periods in which it proposes that the PM CEMS may not be in operation in accordance with Performance Specification 11. Upon approval by EPA and NJDEP, PSEG Fossil shall implement the QA/QC protocol in accordance with the terms set forth therein. PSEG Fossil shall operate each PM CEMS at all times that the Unit it serves is in operation, except as provided for in the QA/QC protocol approved by EPA and NJDEP. Reference: Consent Decree paragraph 154b. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~139~~	~~Urea:~~ ~~when the SNCR system is operating, daily records of urea usage shall be maintained~~ ~~Applies to CD20. [N.J.A.C. 7:27-22.16(a)]~~	~~Monitored by material feed/flow monitoring continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Maintain daily urea usage records per day. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~140~~	~~Ammonia: when the SCR system is operating, daily records of ammonia usage shall be maintained~~ ~~Applies to CD26. [N.J.A.C. 7:27-22.16(a)]~~	~~Ammonia: Monitored by material feed/flow monitoring continuously. [N.J.A.C. 7:27-22.16(o)]~~	~~Ammonia: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Maintain daily ammonia usage records per day. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
141	The owner or operator shall develop a QA/QC plan for all CEMS/COMS required by this permit. This QA/QC plan shall incorporate at a minimum those procedures outlined in 40 CFR, Part 60, Appendix F and/or 40 CFR, Part 75, Appendix B for CEMS and those procedures outlined in 40 CFR, Part 60, Appendix B, Specification One and 40 CFR, Part 51, Proposed RM 203 for COMS, published Department Technical Manuals or other procedures approved in writing by the Department. The QA/QC plan shall designate a coordinator for the facility who is responsible to ensure that the QA/QC plan is implemented. The Department reserves the right to require the QA/QC plan to be revised at any time based on the results of quarterly EEMPR reviews, inspections, audits or any other information available to the Department. All procedures outlined in the QA/QC plan shall commence upon the completion date of the PST. All redundant CEMS/COMS must undergo the QA/QC procedure. [N.J.A.C. 7:27-22.16(a)]	Other: The QA/QC coordinator shall be responsible for reviewing the QA/QC plan on an annual basis. [N.J.A.C. 7:27-22.16(o)].	Other: Maintain readily accessible records of the QA/QC plan including QA date and quarterly reports. [N.J.A.C. 7:27-22.16(o)].	Submit a report: Every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1). All quarterly and annual QA data shall be included in quarterly EEMPR reports and kept on file at the facility. The QA data must be made available to the Department upon request. Any changes to the QA/QC plan shall be submitted in writing to the Supervisor/CEMS Program of the Bureau of Technical Services. [N.J.A.C. 7:27-22.16(o)]
~~142~~	~~Sodium Carbonate: To enhance the collection efficiency of the ESP when burning Ultra Low Sulfur Coal (ULSC), an aqueous sodium carbonate solution may be injected onto the ULSC when needed, at a rate of no more than 8 gallons per minute. [N.J.A.C. 7:27-22.16(a)]~~	~~Monitored by material feed/flow monitoring each month during operation. [N.J.A.C. 7:27-22.16(o)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage each month during operation. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~143~~	~~For equipment subject to Clean Air Interstate Rule (CAIR) NOx Trading Program, comply with N.J.A.C. 7:27-30. [N.J.A.C. 7:27-30]~~	~~Other: See N.J.A.C. 7:27-30. [N.J.A.C. 7:27-30].~~	~~Other: See N.J.A.C. 7:27-30. [N.J.A.C. 7:27-30].~~	~~Comply with the requirement: Upon occurrence of event. [N.J.A.C. 7:27-30]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~144~~	~~The permittee shall comply with all of the requirements of Clean Air Interstate Rule (CAIR) permit for the CAIR NOX Annual Trading Program, CAIR NOX Ozone Season Trading Program, and CAIR SO2 Trading Program issued for this affected unit. [40 CFR 97].~~ ~~[40 CFR 97]~~	~~Other: See attached CAIR Permit [40 CFR 97].~~	~~Other: See attached CAIR Permit [40 CFR 97].~~	~~See attached CAIR Permit~~ ~~Other (provide description): Other. [40 CFR 97]~~
~~145~~	~~For equipment subject to CO2 Budget Trading Program, comply with N.J.A.C. 7:27C. [N.J.A.C. 7:27C]~~	~~Other: See N.J.A.C. 7:27C. [N.J.A.C. 7:27C].~~	~~Other: See N.J.A.C. 7:27C. [N.J.A.C. 7:27C].~~	~~Comply with the requirement: Upon occurrence of event. [N.J.A.C. 7:27C]~~
~~146~~	~~NOx (Total) <= 2,482 tons/yr based on 0.100 lb/MMBTU based on a 30-day rolling average. Effective from December 31, 2010. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~147~~	~~SO2 <= 3,722 tons/yr based on 0.100 lb/MMBTU based on a 30-day rolling average. Effective from December 31, 2010. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U15 Coal Receiving system (1,900 Ton/hr)**

Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~TSP <= 5.1 tons/yr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~PM-10 (Total) <= 2.7 tons/yr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None~~.
~~3~~	~~TSP <= 2.66 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
4	PM-10 (Total) <= 1.27 lb/hr. Maximum emission rate, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~5~~	~~Emissions of all other contaminants shall be below the reporting thresholds given in N.J.A.C. 7:27-22, Appedix Tables A and B, based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~6~~	~~Material processed in the Coal Receiving System shall be limited to coal. This system includes Barge Unloading, Coal Conveyor, Conveyor Tower, Transfer Tower and Coal Pile. This is based on the certified operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Monitored by invoices/bills of loading, for each receiving operation, showing material received.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by manual logging of parameter per change of material. Recordkeeping by invoices/bills of lading per coal delivery, showing the material delivered. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~7~~	~~Total Material Transferred: Total Material Trasferred <=16.644 MMTons/year, based on 8760 hours per year of operation. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Monitoring by computerized coal tracking system, per bulk shipment.[N.J.A.C. 7:27-22.16(o)].~~	~~Total Material Transferred: Recordkeeping by data acquisition system (DAS) / electronic data storage once per bulk fuel shipment. Record in computerized coal tracking system, the date coal was received, the coal suppliers name and address, the quantity of coal received and the sulfur content of the coal. Record the year-to-date coal received. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: **U16 Coal Reclaim system (300 Ton/hr)**

Operating Scenario: **OS Summary**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~TSP <= 2.5 tons/yr based on operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~2~~	~~PM-10 (Total) <= 1.2 tons/yr based on the operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~TSP <= 0.42 lb/hr based on the operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
4	PM-10 (Total) <= 0.2 lb/hr based on the operating permit application. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~5~~	~~Emissions of all other contaminants shall be below the reporting thresholds given in N.J.A.C. 7:27-22, Appedix Tables A and B, based on the preconstruction permit. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~	~~None.~~	~~None.~~
~~6~~	~~Material processed in the Coal Reclaim System shall be limited to coal. This system includes Coal Conveyors, Breaker House, Feeders, Silos, and Pulverizers. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Monitored by process records, showing material material processed in the system.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by manual logging of parameter per change of material. Recordkeeping by process reocrds showing the material processed in the system. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~
~~7~~	~~Total Material Transferred<=2.628 MMtons/year, based on the operating permit application. [N.J.A.C. 7:27-22.16(a)]~~	~~Other: Monitoring by computerized tracking system or process records.[N.J.A.C. 7:27-22.16(o)].~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage once per bulk fuel shipment. Record in computerized coal tracking system, the date and amount of coal along with the year-to-date usage. [N.J.A.C. 7:27-22.16(o)]~~	~~None.~~

PSEG FOSSIL LLC HUDSON GENERATING STATION (12202)
BOP100003

Date: 9/6/2011

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 1 Unit No. 1 Utility boiler - natural gas or No. 6 fuel oil fired (4,558 MMBTU/hr)

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	Unit #1-NG	Utility boiler firing natural gas	Normal - Steady State	E1	CD1 (P)	PT1	1-02-006-02	0.0	8,760.0		800,000.0	1,400,000.0	200.0	290.0
OS2	Unit #1-oil	Utility boiler firing No. 6 fuel oil	Normal - Steady State	E1	CD1 (P)	PT1	1-02-006-02	0.0	8,760.0		800,000.0	1,400,000.0	200.0	290.0
OS3	Unit #1- S/U	Start-up	Startup	E1		PT1	1-02-006-02	0.0	8,760.0					
OS4	Unit #1 -S/D	Shutdown	Shutdown	E1		PT1	1-02-006-02	0.0	8,760.0					
OS5	Unit #1-Main	Maintenance	Maintenance	E1		PT1	1-02-006-02	0.0	8,760.0					

U 2 Unit No. 2 Utility boiler - coal, natural gas, or No. 6 fuel oil fired (6,600 MMBTU/hr)

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	Unit #2-coal	Utility boiler firing coal or cofiring coal with natural gas or oil	Normal - Steady State	E2	CD2 (P) CD20 (T) CD25 (P) CD26 (P) CD27 (P) CD28 (P) CD3 (S)	PT2	1-02-006-02	0.0	8,760.0		2,300,000.0	2,530,000.0	250.0	340.0

PSEG FOSSIL LLC HUDSON GENERATING STATION (12202)
BOP100003

Date: 9/6/2011

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 2 Unit No. 2 Utility boiler - coal, natural gas, or No. 6 fuel oil fired (6,600 MMBTU/hr)

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS2	Unit #2-NG	Utility boiler firing natural gas	Normal - Steady State	E2	CD2 (P) CD20 (T) CD25 (P) CD26 (P) CD27 (P) CD28 (P) CD3 (S)	PT2	1-02-006-02	0.0	8,760.0		2,300,000.0	2,530,000.0	250.0	340.0
OS3	Unit #2-Oil	Utility boiler firing No. 6 fuel oil	Normal - Steady State	E2	CD2 (P) CD20 (T) CD25 (P) CD26 (P) CD27 (P) CD28 (P) CD3 (S)	PT2	1-02-006-02	0.0	8,760.0		2,300,000.0	2,530,000.0	250.0	340.0
OS4	#2-S/U,coal	Start-up on coal	Startup	E2		PT2	1-02-006-02	0.0	8,760.0					
OS5	Unit #2 -S/U	Start-up	Startup	E2		PT2	1-02-006-02	0.0	8,760.0					
OS6	#2-S/D,coal	Shutdown on coal	Shutdown	E2		PT2	1-02-006-02	0.0	8,760.0					
OS7	Unit #2- S/D	Shutdown	Shutdown	E2		PT2	1-02-006-02	0.0	8,760.0					
OS8	Unit #2-Main	Maintenance	Maintenance	E2		PT2	1-02-006-02	0.0	8,760.0					

PSEG FOSSIL LLC HUDSON GENERATING STATION (12202)
BOP110001

Date: 3/8/2011

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 15 Coal Receive Coal Receiving system (1,900 Ton/hr)

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	Coal receive	Coal Receiving System	Normal - Steady State	E22										

U 16 Coal Reclaim Coal Reclaim system (300 Ton/hr)

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	Coal Reclaim	Coal reclaim System	Normal - Steady State	E23										

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT of ENVIRONMENTAL PROTECTION

Division of Air Quality
Bureau of Air Permits
401 E. State Street, 2nd floor, P.O. Box 420, Mail Code 401-02
Trenton, NJ 08625-0420

BOB MARTIN
Commissioner

Air Pollution Control Operating Permit
Minor Modification and Preconstruction Approval

Permit Activity Number: BOP110001 **Program Interest Number: 75507**

Mailing Address	Plant Location
JOSEPH ISABELLA DIR ELECTRIC UTILITY VINELAND CITY MUNICIPAL ELECTRIC UTILITY PO BOX 1508 Vineland, NJ 08362-1508	VINELAND MUNICIPAL ELEC UTIL HOWARD M. DOWN 211 N West Ave Vineland City Cumberland County

Initial Operating Permit Approval Date: August 31, 2005
Significant Modification Approval Date: September 26, 2011
Operating Permit Expiration Date: August 30, 2010 (operating under permit application shield)

This minor modification is approved and issued under the authority of Chapter 106, P.L. 1967 (N.J.S.A. 26:2C-9.2). The equipment at the facility must be operated in accordance with the requirements of this permit.

This approval, in response to your application, merges the provisions of the previously approved operating permit and the changes from this minor modification into a single comprehensive permit that replaces the one previously issued. This minor modification is for the following proposed changes:

- Add a permit condition that states that the unit 10 boiler operating scenarios in the permit are only valid through August 31, 2012; Unit 10 is not permitted to operate, under any operating scenario, on and after September 1, 2012. This comes from a federal Consent Decree (Civil Action No. 1:11-cv-1826-RMB-JS) which requires VMEU to install and operate selective non-catalytic reduction (SNCR) for NOx control or cease operating unit 10 by September 1, 2012; VMEU has chosen to shut the unit down.
- Upate the submittal requirement language for EEMPR submittal.
- Remove IS17 and IS18 – these are duplicate listings of the fuel tanks in U1.

Equipment at the facility referenced by this minor modification **is not covered by** the permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. Pursuant to N.J.A.C. 7:27-22.33(e), this minor modification consists of both a preconstruction approval and operating permit approval. This operating permit does not include compliance schedules as part of the approved compliance plan.

The permittee shall submit to the Department and to the EPA a periodic compliance certification, in accordance with N.J.A.C. 7:27-22.19. The certification shall be submitted electronically through the NJDEP online web portal – Periodic Compliance Certification service, and shall be certified pursuant to N.J.A.C. 7:27-1.39 by the responsible official. Access to DEP Online shall be obtained by following the instructions at: http://www.state.nj.us/dep/online/. The certification should be printed for submission to EPA. The schedule for compliance certifications set forth in the compliance plan in this operating permit. The annual compliance certification reporting period will cover the calendar year ending December 31. **The annual compliance certification is due to the Department and the EPA within 60 days after the end of each calendar year during which this permit was in effect.** If unable to submit electronically, the certification shall be submitted on forms provided by the Department at: http://www.nj.gov/dep/enforcement/compliancecertsair.htm.

The annual compliance certification report may also be considered as your six month deviation report for the period from July 1 through December 31 which is due by January 30 of each year, as required by paragraph 13 in Section F, *General Provisions and Authorities,* of this permit, if the annual compliance certification is submitted by January 30.

New Jersey Department of Environmental Protection
Air & Environmental Quality Compliance & Enforcement
401 East State Street, P. O. Box 422
Trenton, New Jersey 08625-0422

United States Environmental Protection Agency, Region II
Air Compliance Branch
290 Broadway
New York, New York 10007-1866

New Jersey Department of Environmental Protection
Air and Environmental Quality Compliance & Enforcement
Southern Regional Enforcement Office
One Port Center, 2 Riverside Drive
Camden, New Jersey 08103

Your facility's current approved operating permit and any previous versions (e.g. superseded, expired, or terminated) are now available for download in the PDF format at: http://www.nj.gov/dep/aqpp/. After accessing the website, click on "Approved Operating Permits" listed under "Reports" and then type in the Program Interested (PI) Number as instructed on the screen. A RADIUS file for your permit, containing Facility Specific Requirements (Compliance Plan), Inventories, and Compliance Schedules (if needed), can be obtained by contacting your permit writer. Upon importing this information into your personal computer with RADIUS software, you will have up-to-date information in RADIUS format. RADIUS software, instructions, and help are available at the Department's website at www.state.nj.us/dep/aqpp. We also have an Operating Permit Help Line available from 9:00 AM to 4:00 PM daily, where you may speak to someone about any questions you may have. The Operating Permit Help Line number is 609-633-8248.

If, in your judgment, the Department is imposing any unreasonable condition of approval in this permit modification action, you may contest the Department's decision on the modification and request an adjudicatory hearing pursuant to N.J.S.A. 52:14b-1 et seq. and N.J.A.C. 7:27-22.32(a). All requests for an adjudicatory hearing must be received in writing by the Department within 20 calendar days of the date you receive this letter. The request must contain the information requested in N.J.A.C. 7:27-1.32 and the information on the enclosed Administrative Hearing Request Checklist and Tracking Form.

The permittee is responsible for submitting a timely and administratively complete operating permit renewal application. The Operating Permit Renewal Application consists of a RADIUS application and the Application Attachment available in Portable Document Format (PDF) and MS Word format at the Department's website http://www.nj.gov/dep/aqpp/applying.html (check Attachment to the RADIUS Operating Permit Renewal Application). Both the RADIUS application and the Application Attachment, along with any other supporting documents (saved on a CD) must be submitted with a cover letter (paper copy). The application is considered timely if it is received at least 12 months before the expiration date of the operating permit. To be deemed administratively complete, an application for renewal of the operating permit shall include all of the information required by the application form for the renewal and the information required pursuant to N.J.A.C. 7:27-22.30(d). However, consistent with N.J.A.C. 7:27-22.30(c), the permittee is encouraged to submit the renewal application at least 15 months prior to expiration of the operating permit, so that the Department can notify the applicant of any deficiencies in the application. This will allow the permittee to correct any deficiencies, and to better ensure that the application is administratively complete by the renewal deadline. Only applications which are timely and administratively complete will be eligible for coverage by an application shield.

Permittees that are subject to Compliance Assurance Monitoring (CAM), pursuant to 40 CFR 64, shall develop a CAM Plan for modified equipment as well as existing sources. Details of the rule and guidance on how to prepare a plan can be found at EPA's website: www.epa.gov/ttn/emc/cam.html. In addition, CAM Plans must be included as part of the permit renewal application. Permittees that do not submit a CAM Plan may have their modification applications denied, pursuant to N.J.A.C. 7:27-22.3.

If you have any questions regarding this permit approval, please call your permit writer, Michael Hogan, at (609) 633-1124.

Approved by:

_____

Aliya M. Khan
Bureau of Air Permits

Enclosure
CC: S. Riva, USEPA Region II

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U10 357 MMBtu/hr utility boiler - wall (face) fired - coal or No.6 fuel oil fired

Operating Scenario: OS Summary

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~1~~	~~Conduct a comprehensive stack test at emission point PT10 by August 31, 2011, and thereafter conduct an annual comprehensive stack test at emission point PT10 in any calendar year in which No. 6 fuel oil is combusted, to demonstrate compliance with the NOx, CO, VOC, TSP and PM10 emission limits while combusting No. 6 fuel oil. Compliance shall also be determined by continuous emission monitoring for NOx, CO, O2 and opacity. In addition, the No. 6 fuel oil shall be analyzed for sulfur content at the time of stack testing.~~ ~~Three tests shall be conducted at worst case permitted operating conditions achievable under the corresponding test conditions, such as ambient (relative humidity and temperature) conditions for that day, with regard to meeting the applicable emission standards, but without creating an unsafe condition. The permittee shall submit to BTS all data necessary to substantiate the ambient conditions. The testing shall be conducted in accordance with the protocol approved by Chief, BTS. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by continuous emission monitoring system continuously and by stack emission testing annually. (See Applicable Requirement).~~ ~~Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. Compliance period shall be as specified in the monitoring requirement for each applicable emission limit. Three stack tests shall be conducted for NOx, CO, VOC, TSP and PM10 emissions, while combusting No. 6 fuel oil. [N.J.A.C. 7:27-22.16(e)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously , by stack emission test results and by certified lab analysis. [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 180 days of initial use of #6 fuel oil.~~ ~~Within 30 days of the protocol approval, the permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. A full stack test report and fuel sulfur analysis must be submitted to BTS within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). A certified summary test report, as described in the protocol, and a fuel sulfur analysis must be submitted to the regional enforcement office within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). The test results must be certified by a licensed professional engineer or certified industrial hygenist.~~ ~~A copy of the certified summary test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit.~~ ~~Emissions shall be reported in lb/hr, lb/MMBtu (HHV), and ppmvd @ 7% O2 (for NOx, CO, and VOC) and fuel sulfur content shall be reported in weight percent. [N.J.A.C. 7:27-22.18(e)] and. [N.J.A.C. 7:27-22.18(h)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
~~2~~	~~Monthly sampling and analysis for heavy metal concentrations in No. 6 fuel oil. Samples of No. 6 fuel oil supplied to the boiler shall be taken in any month during which No. 6 fuel oil is combusted, and analyzed monthly or quarterly, at the discretion of the permittee, for arsenic, beryllium,cadmium, chromium (total), lead, manganese, mercury, nickel, phosphorous and selenium. A 4 quarter weighted average shall be calculated for each of these constituents. Fuel analysis is not required for quarters during which no No. 6 oil is combusted. [N.J.A.C. 7:27-22.16(a)]~~	~~Monitored by fuel sampling (e.g. oil) each month during operation on #6 fuel oil. A sample of #6 fuel oil shall be taken from the fuel supply to the boiler in any month during which No. 6 fuel is combusted. Samples shall be either analyzed individually, with the results from all quarterly samples being averaged, or composited and analyzed quarterly, to represent the fuel quality for that quarter. A quarterly average shall be obtained for any quarter during which No. 6 fuel oil is combusted. Fuel analysis is not required for quarters in which No. 6 fuel oil is not combusted. A weighted rolling average for each period of four consecutive quarters shall be calculated at the end of each quarter for that quarter and the three quarters preceding it, using the analysis results and total fuel use representing each quarter. Sampling and analysis shall be conducted according to USEPA SW846 methodologies or a comparable test method approved by the USEPA and the Department. All analyses shall be conducted by a certified lab. [N.J.A.C. 7:27-22.16(o)]~~	~~Recordkeeping by certified lab analysis results upon occurrence of event. Results of monthly or quarterly lab analysis shall be maintained. Quarters shall begin on January 1, April 1, July 1, and October 1 of each year. [N.J.A.C. 7:27-22.16(o)]~~	~~Submit a report: As per the approved schedule : Once per quarter (three months). Quarters shall begin on January 1, April 1, July 1, and October 1 of each year. Analyses of the HAP metals concentrations of the #6 fuel oil fed into the boiler shall be submitted quarterly, within 45 calendar days after the end of each calendar quarter, to the Southern Regional Enforcement Office per N.J.A.C. 7:27-22.18 and 22.19. [N.J.A.C. 7:27-22.16(o)]~~
3	All operating scenarios related to unit 10 are valid through August 31, 2012 only. Operation of the unit 10 boiler on or after September 1, 2012 is not permitted. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~4~~	~~Opacity <= 20 %. No visible emissions greater than 20% opacity, exclusive of condensed water vapor, except for a period of not longer than three minutes in any consecutive 30-minute period. [N.J.A.C. 7:27-3.2(b)] &. [N.J.A.C. 7:27- 3.2(c)]~~	~~Opacity: Monitored by continuous opacity monitoring system continuously based on any 30 minute block. [N.J.A.C.7:27-3.2(b)] &. [N.J.A.C. 7:27- 3.2(c)]~~	~~Opacity: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously [N.J.A.C.7:27-3.2(a)] &. [N.J.A.C. 7:27- 3.2(c)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): On or before every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U10 357 MMBtu/hr utility boiler - wall (face) fired - coal or No.6 fuel oil fired

Operating Scenario: OS2 Operation of Unit 10 boiler burning No. 6 fuel oil (with No. 2 fuel oil for ignition)

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	This operating scenario is valid through August 31, 2012 only. Operation of the unit 10 boiler on or after September 1, 2012 is not permitted. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~2~~	~~Maximum allowable sulfur dioxide emissions based on #6 fuel oil and geographical zone. SO2 <= 2.1 lb/MMBTU. [N.J.A.C. 7:27- 9.2(c)]~~	~~SO2: Monitored by stack emission testing at the approved frequency, based on any 60 minute period. (See U10, OS Summary, Ref. #1). [N.J.A.C. 7:27-22.16(e)]~~	~~SO2: Recordkeeping by stack test results at the approved frequency. (See U10, OS Summary, Ref. #1). [N.J.A.C. 7:27-22.16(e)]~~	~~Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. (See U10, OS Summary, Ref. #1). [N.J.A.C. 7:27-22.16(e)]~~
~~3~~	~~NOx (Total) <= 0.28 lb/MMBTU. Maximum NOx emission rate. [N.J.A.C. 7:27-19.4(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on a calendar day (in ozone season) or 30 day rolling (at other times) average. (See U10, OS Summary, Ref. #1). [N.J.A.C. 7:27-19.15] and. [N.J.A.C. 7:27-19.18]~~	~~NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. (See U10, OS Summary, Ref. #1). [N.J.A.C. 7:27-19.15] and. [N.J.A.C. 7:27-19.18]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): On or before every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]~~
~~4~~	~~All air pollution control apparatus designated for use during this operating scenario (as listed below) must be operating when No. 6 fuel oil is combusted.~~ ~~1) Low-NOx Burners~~ ~~2) Over-fired air ports~~ ~~3) Mechanical Collector (Particulates)~~ ~~4) Research Cottrell Electrostatic Precipitato.~~ ~~5) Environmental Elements Electrostatic Precipitator [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~	~~None.~~	~~None.~~
~~5~~	~~NOx (Total) <= 170 ppmvd @ 7% O2. Maximum concentration of NOx emissions. [N.J.A.C. 7:27-22.16(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on a calendar day (in ozone season) or 30 day rolling (at other times) average. (See U10, OS Summary, Ref.#1). [N.J.A.C. 7:27-22.16(a)]~~	~~NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. (See U10, OS Summary, Ref. #1). [N.J.A.C. 7:27-22.16(a)]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): On or before every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]~~

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U10 357 MMBtu/hr utility boiler - wall (face) fired - coal or No.6 fuel oil fired

Operating Scenario: OS3 Start-up / Shutdown using No.2 fuel oil, with coal or No.6 fuel oil below 45% load.

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	This operating scenario is valid through August 31, 2012 only. Operation of the unit 10 boiler on or after September 1, 2012 is not permitted. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~2~~	~~Start-up is defined as the period from initiation of fuel combustion until the unit reaches 45 percent of full load. The duration of the exemption from N.J.A.C.7:27-22.16 emission limits during start-up shall not exceed 12 hours. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by hour/time monitor continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
~~3~~	~~Shut-down is defined as the period from initial lowering of the unit output below 45 percent of full load until the cessation of fuel combustion. The duration of the exemption from N.J.A.C.7:27-22.16 emission limits during shut-down shall not exceed 3 hours. [N.J.A.C. 7:27-22.16(e)]~~	~~Monitored by hour/time monitor continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(e)]~~	~~None.~~
~~4~~	~~NOx (Total) <= 0.28 lb/MMBTU. Maximum NOx emission rate. [N.J.A.C. 7:27-19.4(a)]~~	~~NOx (Total): Monitored by continuous emission monitoring system continuously, based on a calendar day (in ozone season) or 30 day rolling (at other times) average. (See U10, OS Summary, Ref. #1). [N.J.A.C. 7:27-19.15] and. [N.J.A.C. 7:27-19.18]~~	~~NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. (See U10, OS Summary, Ref. #1). [N.J.A.C. 7:27-19.15] and. [N.J.A.C. 7:27-19.18]~~	~~Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): On or before every April 30, July 30, October 30, and January 30 for the preceding quarter year (the quarter years begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.16(o)]~~
~~5~~	~~All Permit requirements contained in OS Summary shall apply during Start-up and Shut-down as defined in this operating scenario. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None~~.

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit: U22 Emergency Generator
Operating Scenario: OS Summary

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	NOx (Total) <= 3.5 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~2~~	~~CO <= 0.68 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
~~3~~	~~VOC (Total) <= 0.23 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None~~.
4	SO2 <= 0.18 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~5~~	~~TSP <= 0.33 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~
6	PM-10 (Total) <= 0.33 tons/yr. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
~~7~~	~~Pb <= 0.003 tons/yr. [N.J.A.C. 7:27-22.16(a)]~~	~~None.~~	~~None.~~	~~None.~~

VINELAND MUNICIPAL ELEC UTIL HOWARD M. DOWN (75507)
BOP110001

Date: 9/27/2011

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 10 Unit 10 357 MMBtu/hr utility boiler - wall (face) fired - coal or No.6 fuel oil fired

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS2	10-No.6 oil	Operation of Unit 10 boiler burning No. 6 fuel oil (with No. 2 fuel oil for ignition)	Normal - Steady State	E10	CD1 (P) CD2 (P) CD4 (P) CD6 (S) CD7 (T)	PT10	1-01-004-01 1-01-005-01	0.0	8,760.0		50,000.0	150,000.0	260.0	325.0
OS3	SU/SD	Start-up / Shutdown using No.2 fuel oil, with coal or No.6 fuel oil below 45% load.	Startup	E10		PT10								

~~**U 11 Unit No. 11 Gas Turbine - Unit No. 11**~~

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	Turbine - NG	Unit No. 11 Firing Natural Gas	Normal - Steady State	E11	CD19 (P) CD20 (P)	PT11	2-01-001-02 2-01-002-01	0.0	8,760.0		643,417.0	754,623.0	200.0	750.0
OS2	Turbine - FO	Unit No. 11 Firing Ultra Low Sulfur Distillate Fuel	Normal - Steady State	E11	CD19 (P) CD20 (P)	PT11	2-01-001-01	0.0	500.0		626,831.0	753,082.0		750.0

VINELAND MUNICIPAL ELEC UTIL HOWARD M. DOWN (75507)
BOP110001

Date: 9/27/2011

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 22 Emer Gen Emergency Generator

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	Emer. Gen.	Emergency power generation through firing of No. 2 FO	Normal - Steady State	E22		PT22	2-01-001-02	0.0	8,760.0		450.0	1,000.0	200.0	400.0

NOTICE OF OPPORTUNITY FOR PUBLIC COMMENT ON PROPOSED BEST AVAILABLE RETROFIT TECHNOLOGY DETERMINATIONS TO PROTECT AND ENHANCE VISIBILITY LEVELS IN NEW JERSEY'S FEDERALLY DESIGNATED CLASS I AREA

The New Jersey Department of Environmental Protection (NJDEP) is proposing to approve Best Available Retrofit Technology (BART) for qualified equipment to reduce air pollution that causes regional haze. The federal Clean Air Act requires that regional haze be reduced in national parks and wilderness areas, including the Brigantine Wilderness Area in New Jersey. The BART provisions of the federal Regional Haze Rule require that states identify BART for controlling emissions of haze-causing air pollutants from specific existing sources, and that the appropriate BART emission limitations are included in the State's Implementation Plan to reduce regional haze. This notice seeks public comment on NJDEP's determination of BART for the eligible facilities in New Jersey.

The five facilities included in the proposed BART determinations include four refineries and one coal fired power plant, 1) Chevron Products (asphalt refinery), 2) Amerada Hess Port Reading Refinery (gasoline and heating oil), 3) ConocoPhillips Bayway Refinery (gasoline and heating oil), 4) Sunoco Eagle Point (gasoline and heating oil), and 5) PSEG Hudson Generating Station (coal and gas-fired electric generation). All the refinery fluid catalytic cracking unit regenerators, the major sulfur dioxide emitting unit at a gasoline refinery, have scrubbers to effectively control sulfur dioxide and particulate emissions. The coal fired power plant is being retrofit with scrubbers for sulfur dioxide control, baghouses for particulate control, and selective catalytic reduction for nitrogen oxide control. These three pollutants all contribute to regional haze, with sulfur dioxide being the greatest contributor.

NJDEP has determined that only three facilities in New Jersey currently meet the federal criteria for BART eligibility. Two of these facilities, ConocoPhillips Bayway Refinery and PSEG Hudson Generating Station, are subject to New Jersey rules, permits, and enforcement agreements that require air pollution control that is BART. Another facility, Chevron Products, has proposed to take limits on the operation of affected emission units so the potential to emit air pollution is lower than the threshold levels for which BART is required. Two remaining facilities, which had previously been identified in NJDEP's haze plan as possibly requiring BART, have been determined to have the potential to emit less air pollution than would be subject to BART.

In addition to satisfying the BART requirements, New Jersey has also adopted rules to reduce the sulfur in oil used for heating and electric generation as part of a regional agreement with other states to reduce regional haze and particulate air pollution in the Mid-Atlantic and Northeast. The State Implementation Plan for Regional Haze, which provides more information on these rules and BART, is available at http://www.state.nj.us/dep/baqp/2008%20Regional%20Haze/Regional%20Haze.html.

This public notice, a fact sheet, and the Technical Support Document for the BART determinations have been posted at the Air Quality Permitting website: http://www.state.nj.us/dep/aqpp/publichotices.htm. Copies of these documents and additional information on this proposed BART determination can be obtained by calling Margaret Gardner (609-292-7095).

All persons, including the affected facilities, who believe that any condition of the proposed BART determination is inappropriate, must raise all reasonable issues of concern and submit all arguments and factual grounds or materials supporting their position during the public comment period. Any comments on this proposed BART determination and/or a request for public hearing must be received within thirty days of the date of this notice and addressed to Margaret Gard-

STATE OF NEW JERSEY }
COUNTY OF ESSEX } SS

Sonya Tellis

Being duly sworn, according to law, on his/her oath sayeth that he/she is CLERK of the Star-Ledger, in said County of Essex, and that the notice, of which the attached is a copy, was published in said paper on the 30 day of December, 2010 and continued therein for _____ successively, at least once in each _____ for 1 day

Sonya Tellis

Sworn to and subscribed before me this 28 day of December, 200

NOTARY PUBLIC of NEW JERSEY

MEDINAH Y. JONES
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES: JANUARY 18, 2013

The Press OF ATLANTIC CITY

MEDIA GROUP

Certification - Proof of Publication

Lauren Masco of lawful age, acting in her capacity as an employee of South Jersey Publishing Company, Inc. d/b/a The Press of Atlantic City, a daily newspaper printed and published c/o 1000 West Washington Avenue, Pleasantville, New Jersey 08232, and distributed in the following counties: Atlantic, Camden, Cape May, Cumberland, Gloucester, and Ocean and mailed to various parts of the State of New Jersey, the United States, and foreign countries, does hereby certify that the Notice accompanying this Certification was published in The Press of Atlantic City on :

Ed. 1: 8/3/11

All interested parties may rely upon the representations contained herein limited solely to the authenticity of the Notice accompanying this Certification to be an accurate reproduction of the same and the date upon which it was published.

Dated: 08/04/2011.

Lauren Masco

Lauren Masco

SOUTH JERSEY PUBLISHING COMPANY
CORPORATE SEAL
1963
PENNSYLVANIA

NOTICE OF OPPORTUNITY FOR PUBLIC COMMENT ON PROPOSED TECHNICAL ADDENDUM TO THE FINAL BEST AVAILABLE RETROFIT TECHNOLOGY DETERMINATIONS TO PROTECT AND ENHANCE VISIBILITY LEVELS IN NEW JERSEY'S FEDERALLY DESIGNATED CLASS I AREA

The New Jersey Department of Environmental Protection (NJDEP) is proposing to approve an addendum to the March 10, 2011, Final Best Available Retrofit Technology (BART) Determinations to include qualified equipment at Vineland Municipal Electric Utility and BL England Generating Station. The federal Clean Air Act requires that regional haze be reduced in national parks and wilderness areas, including the Brigantine Wilderness Area in New Jersey. The BART provisions of the federal Regional Haze Rule require that states identify BART for controlling emissions of haze-causing air pollutants including oxides of nitrogen (NOx), sulfur dioxide (SO2), and particulate matter (PM10), from specific existing sources put in place from 1962 to 1977, and that the appropriate BART emission limitations are included in the State's Implementation Plan to reduce regional haze. All three pollutants, NOx, SO2, and PM10, contribute to regional haze, with SO2 being the greatest contributor.

The list of BART-eligible sources identified in the March 10, 2011, BART Technical Support Document (TSD) did not include Vineland Municipal Electric Utility and BL England Generating Station, which were anticipated to permanently shutdown their potentially BART-affected boilers as a result of enforceable agreements that were negotiated concurrent with the BART process. NJDEP has subsequently determined that these facilities are BART-eligible. This notice seeks public comment on NJDEP's determination of BART for these two eligible facilities in New Jersey.

The two facilities addressed in the proposed BART addendum are each fossil fuel-fired steam electric generating power plants of more than 250 million BTU/hr heat input with potential NOx, SO2, or PM10 emissions greater than 250 tons per year. Vineland Municipal Electric Utility has a BART-qualified boiler (E10) that is subject to a federal Consent Decree, and proposes to permanently cease operation of E10 by September 1, 2012, which would make this source no longer BART-eligible.

BL England is subject to an Administrative Consent Order (ACO) issued by NJDEP that requires the facility to either repower Units 1 and 2 (E1 and E2, respectively) which are coal-fired boilers, or meet the NOx, SO2, and PM performance standards of the ACO through controls. Unit 3 (E3) is a No.6 oil-fired boiler that is required to meet newer rule requirements for NOx emissions and sulfur content in fuel. BL England Generating Station is subject to New Jersey rules, permits, and enforcement agreements that require air pollution controls which meet the BART requirements.

This public notice, a fact sheet, and the Technical Support Document for these additional BART determinations have been posted at the Air Quality Permitting website: http://www.state.nj.us/dep/aqpp/publicnotices.htm. Copies of these documents and additional information on this proposed addendum to NJDEP's BART determinations can be obtained by calling Margaret Gardner (609-292-7095). The March 10, 2011, Final Best Available Retrofit Technology (BART) Determinations for Affected BART-eligible Sources and the July, 2009, State Implementation Plan for Regional Haze can be found online at: http://www.state.nj.us/dep/baqp/sip/siprevs.htm.

All interested parties, including the affected facilities, who believe that any condition of the proposed BART addendum is inappropriate, must raise all reasonable issues of concern and submit all arguments and factual grounds or materials supporting their position during the public comment period. Any comments on this proposed BART determination and/or a request for public hearing must be received within thirty days of the date of this notice and addressed to:

Margaret Gardner
New Jersey Department of
Environmental Protection
Air Quality Permitting Program
Bureau of Air Permits
401 East State St. - 2nd Floor, PO Box
420, Mail Code 401-02
Trenton, NJ 08625-0420
(609) 292-7095

NJDEP will consider and respond to all written and timely submitted comments. Each person, who submitted written comments, will receive a notice of the NJDEP's final decision regarding the proposed addendum to NJDEP's BART determinations and a copy of the Response to Comment document.
Printer Fee: $80.37
#0090665352
Pub Date: August 3, 2011

SIP Completeness Checklist

Administrative Materials

1. **A formal letter of submittal from the Governor or designee requesting USEPA approval of the revision.**

   Letter is included with this BART supplement to the 2009 Regional Haze SIP package.

2. **Evidence that the State has adopted the revision in the State code or body of regulations; or issued the permit, order, consent agreement (hereafter document) in final form. That evidence should include the date of adoption or final issuance as well as the effective date of the revision if different from the adoption/issuance date.**

   A copy of the cover letter issued to each BART source with the respective effective date of Title V operating permit modification approval is included with the package on CD.

3. **Evidence that the State has the necessary legal authority under State law to adopt and implement the revision.**

   Under the CAA, BART requirements must be incorporated into the Title V operating permits of the affected facilities. N.J.A.C. 7:27-22, Operating Permits, gives the legal authority to NJDEP to implement the BART requirements. A copy of the Operating Permits rule, Subchapter 22, is available at http://www.state.nj.us/dep/aqm/Sub22.pdf

4. **A copy of the actual regulation, or document submitted for approval and incorporation by reference into the SIP, including indication of the changes made to the existing approved SIP, where applicable. The submittal should be a copy of the official state regulation/document signed, stamped, dated by the appropriate State official indicating that it is fully enforceable by the State. The effective date of the regulation/document should, whenever possible, be indicated in the document itself.**

   A copy of the sections of the approved Title V permits that show the relevant applicable requirements, monitoring, recordkeeping, and reporting for each source is included in this package. Each copy has the date of issuance in the header, or if different, the effective date is listed in the applicable requirement of the permit's compliance table. The approval letters are signed by the appropriate State officials in the Bureau of Air Permits. Refer to respective folder

containing the appropriate permit documents on the enclosed CD.

5. Evidence that the State followed all the requirements of its Administrative Procedures Act (or equivalent) in conducting and completing the adoption/issuance of the revision.

A notice of opportunity for public comment on NJDEP's proposed Best Available Retrofit Technology (BART) determinations was published on December 20, 2010. Refer to page 52 of the March 2, 2011 Technical Support Document. The comment period ended on January 21, 2011. The public notice, Technical Support Document (TSD), and fact sheet were also posted on the NJDEP Air Quality Permitting Program's website under Public Notices. NJDEP also sent written notification of the proposed BART to each environmental commission of the cities of Linden and Jersey City where ConocoPhillips and PSEG Hudson are located, respectively.

Another notice of opportunity for public comment on NJDEP's proposed Technical Addendum to the Best Available Retrofit Technology (BART) determinations for Vineland Municipal Electric Utility and BL England Generating Station was subsequently published on August 3, 2011 in the Press of Atlantic City. See Attachment 8 on page 127 of the December 7, 2011 Technical Addendum to the Technical Support Document. NJDEP also sent written notification of the proposed BART addendum to USEPA Region 2, and electronic notification to the US Fish and Wildlife Service and the US Forest Service. The comment period ended on September 2, 2011.

6. Evidence that Public Notice was given of the proposed change consistent with procedures approved by EPA, including the date of publication of such notice.

Copies of the Affidavits of Publication of the Public Notices are included in this package.

7. Certification that public hearing(s) were held in accordance with the information provided in the public notice and the State's Administrative Procedures Act (or equivalent), if applicable.

There were no requests to conduct public hearings, therefore, none were conducted.

8. Compilation of public comments and the State's response thereto.

Comments were received regarding BART determinations from the United States Fish and Wildlife Service and the United States Forest Service, and the Sierra Club and RC Cape May, owner of BL England Generating Station. The Department's responses to these comments are included in the technical support documents. See Appendix C on page 48 of the March 2, 2011 Technical Support Document, and Attachment 7 on page 124 of the December 7, 2011 Technical Addendum to the Technical Support Document.

Technical Support

1. **Identification of all regulated pollutants affected by the revision:**

   Visibility-impairing pollutants that must be addressed by sources subject to BART include oxides of nitrogen (NO_x), sulfur dioxide (SO_2), and particulate matter (PM_{10}).

2. **Identification of the locations of affected sources including the EPA attainment or nonattainment designation of the locations, and the status of the attainment plan for the affected sources:**

   The locations of the affected sources are given in the technical support documents and in the general information provided for each facility in the respective folder containing the appropriate permit documents on the enclosed CD.

3. **Quantification of the changes in SIP allowable emissions from affected sources. Estimates of changes in current actual emissions from affected sources or, where appropriate, quantification of changes in actual emissions from affected sources through calculations of the differences between certain baseline levels and allowable emissions anticipated post revision:**

   The reductions benefits in visibility impairing pollutants are a result of enforcement agreements that require air pollution controls that are equivalent to BART.

4. **Demonstration that the NAAQS/PSD increments/RFP demonstrated/ visibility are protected if revision is approved and implemented:**

   The Best Available Retrofit Technology (BART) requirement of Section 169A of the Clean Air Act (42 U.S.C.§7491(b)(2)(A)) and implementing rules (40 C.F.R. Part 51, Appendix Y) are intended to reduce visibility impairing pollutants emitted from existing stationary sources which were grandfathered from the New Source Review (NSR) requirements of the Clean Air Act.

5. **Modeling information required to support the proposed revision, including input data, output data, models used, justification of model selections, ambient monitoring data used, meteorological data used, justification for use of off-site data (where used), modes of models used, assumptions, etc.:**

   MANE-VU chose to use the cumulative assessment of contribution option[1] to analyze the

[1] 70 Fed. Reg. 39163, July 6, 2005.

contribution to visibility impairment of all BART-eligible facilities within the region. The MANE-VU cumulative contribution assessment (NESCAUM, 2006b) concluded that every MANE-VU state with BART-eligible sources contributes to visibility impairment at a Class I area to a significant degree. In June 2004, the MANE-VU Directors made a policy decision that if a source is eligible for BART, it is subject to BART review regardless of its modeled visibility impairment from the specific unit.[2]

6. **Evidence, where necessary, that emission limitations are based on continuous emission reduction technology, e.g., add-on controls, industrial/process equipment designs, reformulated materials, etc.:**

   A copy of the sections of the approved Title V permits that show the relevant applicable requirements, monitoring, recordkeeping, and reporting for each source is included in the respective folder containing the appropriate permit documents on the enclosed CD.

7. **Evidence that a revision contains emission limitations, work practice standards and record keeping/reporting requirements, where necessary, to ensure emission levels:**

   A copy of the sections of the approved Title V permits that show the relevant applicable requirements, monitoring, recordkeeping, and reporting for each source is included in the respective folder containing the appropriate permit documents on the enclosed CD.

8. **Compliance/enforcement strategies including how compliance will be determined in practice, and at what frequency:**

   A copy of the sections of the approved Title V permits that show the relevant applicable requirements, monitoring, recordkeeping, and reporting for each source is included in the respective folder containing the appropriate permit documents on the enclosed CD.

9. **As appropriate, special economic and technological justifications per applicable EPA policies. For example, economic and technological justification for alternative RACT, for long-term averaging for VOC emission limits, or its support bubble proposals.**

   Refer to the technical support documents for details regarding the BART analyses.

---

[2] http://www.nescaum.org/topics/regional-haze/regional-haze-documents