

# STATEMENT OF BASIS for KEARNY GENERATING STATION

## TITLE V OPERATING PERMIT RENEWAL

Program Interest (PI): 12200 / Permit Activity Number: BOP190002

### I. FACILITY INFORMATION

Kearny Generating Station is located at 118 Hackensack Ave, Town of Kearny, Hudson County, New Jersey, 07032. It is an electric generating plant owned by Parkway Generation Operating LLC and operated by Consolidated Asset Management Services (CAMS) LLC

The facility is classified as a major facility based on its potential to emit (PTE) of 176 tons per year (tons/yr) of Carbon Monoxide (CO), 169 tons/yr of Nitrogen Oxides (NO<sub>x</sub>), and 33 tons/yr of Volatile Organic Compounds (VOC) to the atmosphere.

The facility is not a major hazardous air pollutant (HAP) facility. A major HAP emitting facility is designated as major when the allowed emissions exceed 10 tons per year of any individual hazardous air pollutant or 25 tons per year of any combination of individual hazardous air pollutants that may be emitted simultaneously.

This permit allows any individual HAP to be emitted at a rate to not exceed: 7.6 pounds per year of 1,3-Butadiene; 454 pounds per year of Acetaldehyde, 26.8 pounds per year of Acrolein; 2.07 pounds per year of Arsenic; 144 pounds per year of Benzene; 0.06 pounds per year of Beryllium; 0.86 pounds per year of Cadmium; 363 pounds per year of Ethyl benzene; 2972 pounds per year of Formaldehyde; 4.0 pounds per year of Lead; 141.6 pounds per year of Manganese; 20.6 pounds per year of Naphthalene; 0.82 pounds per year of Nickel; 19.8 pounds per year of Polycyclic aromatic hydrocarbons; 19.8 pounds per year of Polycyclic organic matter; 329 pounds per year of Propylene oxide; and 0.0006 pounds per year of Dioxin & Furans.

### II. AREA ATTAINMENT CLASSIFICATION

The Federal Clean Air Act (CAA) sets National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are particulate matter, ground-level ozone, carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead. The US Environmental Protection Agency (USEPA) also classifies areas as "attainment" or "nonattainment" for each criteria pollutant, based on the magnitude of an area's problem. Nonattainment classifications are used to specify what air pollution reduction measures an area must adopt, and when the area must reach attainment. Currently, the entire State of New Jersey is designated as nonattainment for the 8-hour ozone NAAQS. New Jersey is designated attainment for all other pollutants. For nonattainment classification refer to <https://www.epa.gov/green-book/green-book-national-area-and-county-level-multi-pollutant-information>.

### III. BACKGROUND AND HISTORY

The equipment that emits air contaminants from this facility include:

1. Four (4) identical General Electric (GE) LM6000 simple-cycle combustion turbines with a heat input rate of 463 Million British Thermal units per hour higher heating value (MMBtu/hr (HHV)). These turbines have water injections for NO<sub>x</sub> emissions control. The fuel used by these turbines is natural gas and ultralow sulfur distillate oil (ULSD) with a sulfur content of 0.0015% sulfur by weight. The maximum fuel use limits correspond to an overall annual utilization Rate of 12.4% when firing both distillate oil and natural gas and 13.5% when firing only natural gas. This is equivalent to approximately 1300 hours per year per gas turbine. Emissions are monitored by stack tests and Water/Fuel ratios.
2. Six (6) identical General Electric LM6000 simple cycle combustion turbines burning natural gas. Each turbine has a heat input rate of 485 MMBTU/hr (HHV). The permitted annual capacity for all the six turbines is 34 percent (equivalent to 2,978 hours per turbine per year). The combined maximum electricity generated by the six turbines is approximately 294 MW. All six turbines have water injections along with Selective Catalytic Reduction (SCR) systems to reduce NO<sub>x</sub> emissions by 90 percent (2.5 ppmvd NO<sub>x</sub>) and an oxidation catalyst to reduce CO emissions by

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90% and VOC emissions by 60%. CO is the surrogate for VOC. These combustion turbines have CEMs for NOx and CO.

3. One (1) 29.5 MMBTU/hr (HHV) emergency diesel generator (EDG). This generator is permitted to operate up to 100 hrs/yr on oil No. 2, diesel fuel, or kerosene, for testing and maintenance.

Table 1 - Operating Permit Revision History (located at the end of this document) provides a summary of all the changes that have been incorporated into the operating permit through seven-day notice changes, administrative amendments, minor modifications, or significant modifications since the approval of the initial operating permit or the most recent renewal thereof. Please refer to the attached explanation sheet for the structure and configuration of conditions of approval, included in the Facility Specific Requirements section of this permit.

Health Risk Assessment was conducted as part of the review of this permit application and health risk was determined to be negligible consistent with NJDEP Technical Manual 1003.

This is a Permit Renewal includes the following changes:

1. Update of the facility wide requirements (FC) section of the compliance plan.
2. Update of Section B, General Provisions and Authority of the Permit Text.
3. Revision of Renewal Stack testing Requirements for Emission Units U13 and U14. The requirement for renewal stack emissions testing for emission units U13 and U14 was revised from "conduct stack emission testing prior to permit expiration date " to "conduct stack testing every five years from the date of last stack test". The monitoring and recordkeeping requirements were also changed accordingly.
4. Removal of following requirement from U14, OS Summary as the 10 years have been completed since 2009 when the capacity of these turbines was increased in the permit from 13.5% to 15.5% without any increase in emissions. As per 40 CFR 52.21(r)(6)(iii) the facility was required to monitor the actual emissions for a period of 10 years:  
"Commencing with calendar year 2010 and continuing for ten 10) calendar years thereafter, the permittee shall calculate the actual tons of regulated NSR pollutants including CO, NOx, particulate Matter PM (Total suspended particulates TSP), PM-10, Sulfur dioxide (SO2) and VOC from Unit No. 12 (Emission Unit U14) in each calendar year period. [40 CFR 52.21(r)(6)(iii)]"  
If in a given year the actual emissions exceeded the proposed actual emissions in the application, the facility was required to submit a report to EPA Region 2 after each year
5. Removal of stack testing requirements of VOC lb/hr for Emission Unit U13 turbines as per Department's "Testing and Monitoring Requirements for Existing Stationary Turbines" for natural gas. Stack tests conducted in 2013 and 2019 on all six turbines of U13 showed that each turbine met the permitted VOC emission limits. Furthermore, CO is the surrogate for VOC and the facility monitors CO by CEMs.
6. Removal of fuel oil SO<sub>2</sub> limits throughout the permit that were based on sulfur content limits (0.034%) that no longer apply. The facility currently uses ULSD (0.0015%).
7. Creation of new operating scenarios for all U13 turbines for start-up (SU) and shut down (SD) with inclusion of all criteria pollutant's emission limits in these operating scenarios.
8. Creation of new operating scenarios for all U14 turbines for SU, SD, fuel transfer, and mechanical safety testing with inclusion of all criteria pollutant's emission limits in these operating scenarios.
9. Revision of permitted HAPs (U13, U14, and U56) to include all HAPs that have a potential to emit above the reporting thresholds at N.J.A.C. 7:27-17. These HAPs are 1,3-Butadiene, Acetaldehyde, Benzene, Beryllium, Cadmium, Ethyl benzene, Manganese, Naphthalene, Nickel, and Propylene oxide. Include HAPs in Startup/shutdown (SU/SD) scenarios as well.
10. Inclusion of methane emissions to U13, U14 and U56; and nitrous oxide emissions to U13 and U14 as they are above the 0.05 pound per hour N.J.A.C 7:27-8 reporting thresholds.
11. Clarification that Formaldehyde emissions are included in the VOC emission limits for U13 and U14.

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12. Addition of Federal Requirements Summary to U13, U14, and U56.
13. Update of the CEMs Summary Requirements to add language which states that Emission Measurement Section (EMS) approval is required for a change in units being modified.
14. Update of N.J.A.C. 7:27-19 monitoring requirements to clarify that in addition to using CEMs, combustion adjustment can be performed by periodic emission monitoring OR if not using a certified CEMS, monitoring shall be performed in accordance with the specific procedures for combustion adjustment monitoring specified in NJDEP Technical Manual 1005.
15. Removal of language related to shakedown period of U13 turbines as this is no longer applicable.
16. Renewal of Acid Rain permit pursuant to 40 CFR 72.

There are no proposed changes to air contaminants. The HAPs (total) increases from 1.58 tons per year to 2.24 tons per year because of inclusion of the new HAPs that are above the new lower revised reporting thresholds in N.J.A.C. 7:27-17.

#### IV. BASIS FOR MONITORING AND RECORDKEEPING REQUIREMENTS

The facility's operating permit includes monitoring, recordkeeping and reporting requirements that are sufficient to demonstrate the facility's continued compliance with the applicable requirements consistent with the following:

1. Provisions to implement the testing and monitoring requirements of N.J.A.C. 7:27-22.18, the recordkeeping and reporting requirements of N.J.A.C. 7:27-22.19, and all emissions monitoring and analysis procedures or compliance assurance methods required under the applicable requirements, including any procedures and methods promulgated pursuant to 40 CFR 64; and
2. Where the applicable requirement does not require direct periodic monitoring of emissions, the Department requires periodic monitoring of surrogate parameters sufficient to yield reliable data from the relevant time period that are representative of the facility's compliance with the permit.

##### Combustion Turbines:

For combustion turbines at U13 and U14 the facility monitors heat input and fuel use as surrogates for the short term and long-term (TPY) emission limits for HAPs.

The facility monitors fuel use as surrogate for long-term (TPY) emission limits for VOC, SO<sub>2</sub>, TSP, PM<sub>10</sub>, PM<sub>2.5</sub>, ammonia, methane, nitrous oxide, and Greenhouse gases as CO<sub>2</sub>e.

The facility monitors fuel use as surrogate for short-term (lb/hr) emission limits for SO<sub>2</sub>, TSP, VOC, Methane, Nitrous Oxide, and Ammonia for U13 and when combusting natural gas.

The facility monitors fuel use, as surrogate for short-term (lb/hr) emission limits for SO<sub>2</sub>, TSP, VOC, Methane, Nitrous Oxide, PM<sub>10</sub>, and PM<sub>2.5</sub> for U14 and when combusting natural gas; and monitors sulfur content as surrogate for short-term (lb/hr) emission limits for SO<sub>2</sub> when combusting ULSD.

##### Emergency Generators

For emergency generator at U101, and emergency diesel generator at U56, the facility monitors hours of operation as the surrogate for the long-term (TPY) and short-term (lb/hr) emission limits for VOC, NO<sub>x</sub>, CO, SO<sub>2</sub>, TSP, Methane, Nitrous Oxide, PM<sub>10</sub> and PM<sub>2.5</sub>. Surrogate monitoring for the short-term (lb/hr) emission limits for SO<sub>2</sub> is fuel oil sulfur content for SO<sub>2</sub>.

3. In some cases, direct periodic monitoring of emissions and/or surrogate parameters is not required due to one or more of the following:
  - Equipment size and capacity limitations,

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- Subject equipment being permitted at the maximum rated capacity,
- There is no specific state or Federal standard that applies to this piece of equipment,
- Not a pollutant of concern for this piece of equipment,
- Agreements with EPA on the frequency of testing and monitoring for combustion sources.

### V. APPLICABLE STATE AND FEDERAL RULES

The facility is subject to New Jersey Air Pollution Control Regulations, codified in N.J.A.C. 7:27-1 through 34, as applicable. A complete text of these regulations is available at:

<http://www.nj.gov/dep/aqm/rules27.html>

The facility is subject to Federal regulations listed below.

- NSPS Subpart A: New Source Performance Standards - General Provisions
- NSPS Subpart KKKK: New Source Performance Standards for Stationary Gas Turbines
- 40 CFR 72 Acid Rain Program
- 40CFR 97 Cross-State Air Pollution Rule (CSAPR)
- NSPS Subpart IIII New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines
- NESHAP Subpart ZZZZ national Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
- 40 CFR 60 Subpart GG: New Source Performance Standards for Stationary Gas Turbines
- 40 CFR 63 Subpart A National Emission Standards for Hazardous Air Pollutants (NESHAP) - General Provisions

The Greenhouse Gas (GHG) emissions from this facility are 674,567 TPY CO<sub>2</sub>e and there is no GHG emissions increase. This renewal is not subject to PSD rules at 40 CFR 52.21.

### VI. FACILITY'S COMPLIANCE STATUS

The Responsible Official at the facility has certified that the facility currently meets all applicable requirements of the Federal Clean Air Act and the New Jersey Air Pollution Control Act. Based on this certification, the Department's evaluation of the information included in the facility's application, and a review of the facility's compliance status, the Department has concluded that this air pollution control operating permit should be approved.

The facility has submitted a timely and complete application to renew their operating permit and an application shield is in effect.

This operating permit also includes a permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. A permit shield provides that compliance with the relevant conditions of the operating permit shall be deemed compliance with the specific applicable requirements that are in effect on the date of issuance of the draft operating permit, and which form the basis for the conditions in the operating permit.

Also, prior to the expiration of the five-year period, the facility will be required to apply for a renewal of this operating permit, at which time the Department will evaluate the facility and issue a public notice with its findings.

### VII. EXEMPT ACTIVITIES

The facility's operating permit does not include exempt activities such as office and interior maintenance activities, maintenance shop activities, food preparation facilities, cafeterias and dining rooms, etc. A complete list of exempt activities, as allowed by the Operating Permit rule, can be found at N.J.A.C. 7:27-22.1.

Table 1 - Operating Permit Revision History

Permit Activity Number	Type of Revision	Description of Revision	Final Action Date
BOP240001	Administrative Amendment	This Title V Administrative Amendment was to change the Responsible Official to Mr. Peter Van Den Houten and to update other facility contacts. In addition, Kindle Energy no longer manages the Kearny Generating Station hence the asset manager was changed to Alpha Generation.	9/9/2024
BOP230001	Minor Modification	This Title V Minor Modification application was to add N.J.A.C. 7:27F, Control and Prohibition of Carbon Dioxide Emissions, requirements for its combustion turbines to the permit at Group level 3.	10/31/2023
BOP210002	Administrative Amendment	PSEG Fossil LLC (PSEG Fossil) submitted this application for a Title V administrative amendment to change the ownership of Kearny Generating Station from PSEG Power LLC, the corporate parent of PSEG Fossil, to Parkway Generation, LLC on August 12, 2021. The Administrative Amendment was also to remove the following equipment owned and operated by Public Service Electric and Gas Company (PSE&G) from the Title V permit. This Administrative Amendment includes the following: 1) Updated FC requirements based on the current NJDEP rules, policies, and procedures. 2) Replaced 'PSEG Fossil' with 'permittee' throughout the compliance plan. 3) Removed U101 (E101, PT101). 4) Updated Facility Profile Information (Facility Ownership and Contacts). In addition, this application will change in the name of PSEG Fossil LLC to Parkway Generation Operating LLC.	2/20/2022
BOP210001	Administrative Amendment	This administrative amendment application was to replace the Power Plant Manager at the PSEG Fossil Kearny Generating Station (Kearny) with Mr. Roger Clouse the new Power Plant Manager. The Power Plant Manager meets the definition of "Responsible Official" in N.J.A.C. 7:27-1.4.	3/9/2021
BOP190004	Minor Modification	This Title V Minor Modification application was to incorporate relevant provisions of the New Jersey CO2 Budget Trading Program (N.J.A.C. 7:27C).	1/13/20
BOP190003	Administrative Amendment	This administrative amendment application was to replace Mr. Hector Bustamante, the Power Plant Manager at the PSEG Fossil Kearny Generating Station (Kearny) with Mr. Clint Bogan the new Power Plant Manager. The Power Plant Manager meets the definition of "Responsible Official" in N.J.A.C. 7:27-1.4.	9/4/19
BOP190001	Administrative Amendment	This administrative amendment application was to replace the Power Plant Manager at Kearny. Mr. Hector Bustamante replaced Mr. Peter Van Den Houten. The Power Plant Manager meets the definition of "Responsible Official" in N.J.A.C. 7:27-1.4.	4/16/19

BOP160002	Administrative Amendment	This administrative amendment application was to replace the Power Plant Manager at Kearny. Mr. Peter Van Den Houten was the new Power Plant Manager at the facility. The Power Plant Manager meets the definition of "Responsible Official" in N.J.A.C. 7:27-1.4.	10/24/16
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FACILITY NAME (FACILITY ID NUMBER)  
BOP050001

Activity Number assigned  
by the Department

## New Jersey Department of Environmental Protection Facility Specific Requirements

Emission Unit Number  
assigned by the Facility

Brief description of  
emission unit

**Emission Unit:** U40 Sewage Sludge Incinerators  
**Operating Scenario:** OS Summary

OR

**OS2 Fluidized Bed Incinerator**

OS Summary lists all rules and requirements  
that apply to an emission unit. An emission unit  
may contain one or more pieces of equipment  
and corresponding operating scenarios.

OSX denotes the operating scenario number and lists the rules  
and requirements that apply to a scenario. An operating  
scenario represents various ways (or scenarios) a piece of  
equipment is permitted to operate.

Item  
Number

Description of applicable  
requirement

Monitoring method to  
ensure compliance

Recordkeeping to show  
facility's compliance

Actions and submittals  
required for the facility

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	The permittee shall conduct an annual performance test for each pollutant in Table 2 of 40CFR62 Subpart LLL between 11 and 13 calendar months after the previous performance test or within 60 days of a process change. [40 CFR 62.16000(a)]	Other: Conduct the performance test using the test methods, averaging methods and minimum sampling volumes or durations as specified in 40CFR62 Subpart LLL and according to the testing, monitoring and calibration requirements specified in 40 CFR 62.16015(a). [40 CFR 62.16000(a)].	Other: (1) Maintain records of the results of initial, annual and any subsequent performance tests conducted to determine compliance with the emission limits and standards and/or to establish operating limits, as applicable. [40 CFR 62.16025(e)].	Submit a report: Annually to the Administrator and to the Department. The permittee shall submit an annual compliance report as specified in 40 CFR 62. [40 CFR 62.16000(d)]

Rule citation for  
applicable requirement

Rule citation for  
monitoring requirement

Rule citation for  
recordkeeping requirement

Rule citation for submittal/  
action requirement

### Explanation Sheet for Facility Specific Requirements