Newark Liberty International Airport (05392)

Date: 3/16/2023

New Jersey Department of Environmental Protection
Reason for Application

Permit Being Modified

Permit Class: PCP **Number:** 210003

Description of Modifications: Amending permit PCP 210003 to remove emergency generator at Bldg 43 (U1001, E4301) and replacing with a new emergency generator #86961 at Bldg. 43. Capping hours to 36 per year.

New Jersey Department of Environmental Protection
Facility Profile (General)

Facility Name (AIMS): Newark Liberty International Airport **Facility ID (AIMS):** 05392

Street Address: NEWARK LIBERTY INTERNATIONAL AIRPORT
1 CONRAD RD
NEWARK, NJ 07114

Mailing Address: NEWARK LIBERTY INTERNATIONAL AIRPORT
1 CONRAD RD BLDG 80
NEWARK, NJ 07114

State Plane Coordinates:

X-Coordinate:	569
Y-Coordinate:	4,505
Units:	Other
Datum:	Unknown
Source Org.:	Other/Unknown
Source Type:	Other/Unknown

County: Essex

Location Description: Various Locations

Industry:

Primary SIC:	
Secondary SIC:	
NAICS:	488119

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: Air Permit Information Contact

Organization: Port Authority of New York and New Jersey
Org. Type: Multi-State Agency
Name: Steven Dochniak
NJ EIN: 13640065400
Title: Princ. Env Prog Sp.
Phone: (973) 961-6093 x
Fax: ( ) - x
Other: ( ) - x
Type:
Email: sdochnia@panynj.gov
Mailing Address: NEWARK LIBERTY INTERNATIONAL AIRPORT
1 CONRAD ROAD, BUILDING 80
NEWARK, NJ 07114

Contact Type: Fees/Billing Contact

Organization: Port Authority of New York and New Jersey
Org. Type: Multi-State Agency
Name: Steven Dochniak
NJ EIN: 13640065400
Title: Pr. Environmental Programs Specialist
Phone: (973) 961-6093 x
Fax: ( ) - x
Other: (732) 215-6071 x
Type: Mobile
Email: sdochnia@panynj.gov
Mailing Address: NEWARK LIBERTY INTERNATIONAL AIRPORT
1 CONRAD ROAD, BUILDING 80
NEWARK, NJ 07114

Contact Type: General Contact

Organization: Port Authority of New York and New Jersey
Org. Type: Multi-State Agency
Name: Steven Dochniak
NJ EIN: 13640065400
Title: Pr. Environmental Programs Specialist
Phone: (973) 961-6093 x
Fax: ( ) - x
Other: (732) 215-6071 x
Type: Mobile
Email: sdochnia@panynj.gov
Mailing Address: NEWARK LIBERTY INTERNATIONAL AIRPORT
1 CONRAD ROAD, BUILDING 80
NEWARK, NJ 07114

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: **Responsible Official**

Organization: Port Authority of New York and New Jersey
Org. Type: Multi-State Agency

Name: Morys Guzman
NJ EIN: 13640065400

Title: Manager, Airport Maintenance

Phone: (973) 961-6220 x
Fax: ( ) - x
Other: ( ) - x
Type:
Email: moguzman@panynj.gov

Mailing Address: NEWARK LIBERTY INTERNATIONAL AIRPORT
1 Conrad Road, Building 80
Newark, NJ 07114

New Jersey Department of Environmental Protection
Facility Profile (Permitting)

1. Is this facility classified as a small business by the USEPA?	No
2. Is this facility subject to N.J.A.C. 7:27-22?	No
3. Are you voluntarily subjecting this facility to the requirements of Subchapter 22?	No
4. Has a copy of this application been sent to the USEPA?	No
5. If not, has the EPA waived the requirement?	
6. Are you claiming any portion of this application to be confidential?	No
7. Is the facility an existing major facility?	No
8. Have you submitted a netting analysis?	No
9. Are emissions of any pollutant above the SOTA threshold?	No
10. Have you submitted a SOTA analysis?	No
11. If you answered "Yes" to Question 9 and "No" to Question 10, explain why a SOTA analysis was not required	
12. Have you provided, or are you planning to provide air contaminant modeling?	No

Newark Liberty International Airport (05392) Date: 3/16/2023

New Jersey Department of Environmental Protection
Equipment Inventory

Equip. NJID	Facility's Designation	Equipment Description	Equipment Type	Certificate Number	Install Date	Grand-Fathered	Last Mod. (Since 1968)	Equip. Set ID
E4304	B43 86961	Generator 86961-B43	Emergency Generator		1/1/2022	No	4/5/2022	

Newark Liberty International Airport (05392)

Date: 3/16/2023

New Jersey Department of Environmental Protection
Emission Points Inventory

PT NJID	Facility's Designation	Description	Config.	Equiv. Diam. (in.)	Height (ft.)	Dist. to Prop. Line (ft)	Exhaust Temp. (deg. F)			Exhaust Vol. (acfm)			Discharge Direction	PT Set ID
							Avg.	Min.	Max.	Avg.	Min.	Max.		
PT4304	B43 86961	Generator 86961-B43	Round	12	14	1,000	880.0	0.0	880.0	3,190.0	0.0	3,190.0	Up	

Newark Liberty International Airport (05392)

Date: 3/16/2023

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

U 1001 B43 86961 Generator 86961 - B43

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.
OS30	B43 86961	Generator 86961 - B43	Normal - Steady State	E4304		PT4304	2-03-001-01	0.0	36.0		0.0	3,190.0	0.0	880.0

New Jersey Department of Environmental Protection
Potential to Emit

Subject Item: **U1001 B43 86961**

Operating Scenario: **OS0 Summary**

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
CO	0.00000000	1.49380000	1.49380000	1.49380000	tons/yr	No
HAPs (Total)	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No
NOx (Total)	0.00000000	9.84811000	9.84811000	9.84811000	tons/yr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No
PM-10 (Total)	0.00000000	0.13151000	0.13151000	0.13151000	tons/yr	No
SO2	0.00000000	0.34927000	0.34927000	0.34927000	tons/yr	No
TSP	0.00000000	0.13151000	0.13151000	0.13151000	tons/yr	No
VOC (Total)	0.00000000	0.20602000	0.20602000	0.20602000	tons/yr	No

Subject Item: **U1001 B43 86961**

Operating Scenario: **OS30**

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
CO	0.00000000	0.58000000	0.58000000	0.58000000	lb/hr	No
HAPs (Total)	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
NOx (Total)	0.00000000	6.66000000	6.66000000	6.66000000	lb/hr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
PM-10 (Total)	0.00000000	0.03000000	0.03000000	0.03000000	lb/hr	No
SO2	0.00000000	1.25000000	1.25000000	1.25000000	lb/hr	No
TSP	0.00000000	0.03000000	0.03000000	0.03000000	lb/hr	No
VOC (Total)	0.00000000	0.20000000	0.20000000	0.20000000	lb/hr	No

000000 E4304 (Emergency Generator)
Print Date: 3/16/2023

Make:	Cummins 450
Manufacturer:	Cummins Power Generatoration
Model:	DFEJ-2033603
Maximum rated Gross Heat Input (MMBtu/hr-HHV):	4.30

Will the equipment be used in excess of 500 hours per year?

- ○ Yes
- ● No

Have you attached a diagram showing the location and/or the configuration of this equipment?

- ● Yes
- ○ No

Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?

- ● Yes
- ○ No

Comments:

05392 Newark Liberty International Airport PCP000000 U1001 OS30 (Fuel Information Table)
Print Date: 3/16/2023

Fuel Type:	Diesel fuel
Description (if other):	
Amount of Sulfur in Fuel (%):	0.2000
Amount of Ash in Fuel (%):	0.01
Fuel Heating Value:	137,000.00
Units:	BTU/gal
Estimated Maximum Amount of Fuel Burned Annually:	1,091.00
Units:	gal/yr
Estimated Actual Amount of Fuel Burned Annually:	1,091.00
Units:	gal/yr
Comments:	

Installation Manual

Generator Set

QSX15-G9 Engine with PCC 2.3, 3.3, and 3.3 MLD

DFEJ (Spec P)
DFEK (Spec P)

English
Original Instructions

11-2019

A063S744 (Issue 1)

5 Specifications

5.1 Generator Set Specifications

TABLE 4. GENERATOR SET SPECIFICATIONS

MODELS	DFEJ Spec P	DFEK Spec P
Engine		
Cummins Diesel Series	QSX15 (60 Hz)	QSX15 (60 Hz)
Generator kW Rating (Standby)	450	500
Generator kW Rating (Prime)	410	455
Engine Fuel Connection		
Inlet/Outlet Thread Size	Refer to generator set outline drawing supplied	
Maximum Weight (Wet)		
Fuel		
Fuel Pump Flow Rate	56 gph (212 L/hr)	56 gph (212 L/hr)
Maximum Fuel Inlet Restriction	8 in. Hg (203 mm Hg)	
Maximum Fuel Return Restriction	8 in. Hg (203 mm Hg)	
Air		
Maximum Air Cleaner Restriction	25 in. Water Gauge	
Exhaust		
Outlet Size	6 in. NPT Male STD (A299)/ASA Flange (A355) or Slip-on (A298) Optional	
Exhaust Flow at Rated Load (Standby)	3190 cfm	3430 cfm
Exhaust Flow at Rated Load (Standby)	90.3 m^3/min	97.2 m^3/min
Exhaust Flow at Rated Load (Prime)	2990 cfm	3220 cfm
Exhaust Flow at Rated Load (Prime)	84.4 m^3/min	91 m^3/min
Exhaust Temperature (Standby)	880 °F	893 °F
Exhaust Temperature (Standby)	470 °C	478 °C
Exhaust Temperature (Prime)	866 °F	880 °F
Exhaust Temperature (Prime)	464 °C	471 °C
Maximum Allowable Back Pressure	41 in. H2O (10.2 kPa)	
Electrical System		
Starting Voltage	24 Volts DC	
Battery(s)	Two or Four 12 Volt	

Battery Group Number	2x 4D or 4x Group 34 or 4x Group 24
CCA (minimum) Cold Soak	1425A at 0 °F to 32 °F (-18 °C to 0 °C)
Cooling System	
Ambient design	104 °F (40 °C)
Coolant Capacity with Standard Set-mounted Radiator	15.3 Gal (57.9 L)
Lubricating System	
Oil Capacity with Filters	88 qt (83.3 L)

5.2 Engine Fuel Consumption

TABLE 5. FUEL CONSUMPTION (L/HR) AT 1800 RPM (60 HZ)

Model	DFEJ	DFEK
Engine	**QSX15-G9**	**QSX15-G9**
Engine Performance Data at 60Hz[1]	115	127
1. Standby/Full Load Refer to Data Sheets for other applications. In line with the CPG policy of continuous improvement, these figures are subject to change.		

TABLE 6. FUEL CONSUMPTION (GAL/HR) AT 1800 RPM (60 HZ)

Model	DFEJ	DFEK
Engine	**QSX15-G9**	**QSX15-G9**
Engine Performance Data at 60Hz[1]	30.5	33.6
1. Standby/Full Load Refer to Data Sheets for other applications. In line with the CPG policy of continuous improvement, these figures are subject to change.		

Generator set data sheet

Model:	**DFEJ**
Frequency:	**60 Hz**
Fuel type:	**Diesel**
kW rating:	**450 Standby** **410 Prime**
Emissions level:	**EPA NSPS Stationary Emergency Tier 2**

Exhaust emission data sheet:	**EDS-184**
Exhaust emission compliance sheet:	**EPA-1025**
Sound performance data sheet:	**MSP-183**
Cooling performance data sheet:	**MCP-106**
Prototype test summary data sheet:	**PTS-145**
Standard set-mounted radiator cooling outline:	**0500-3326**
Optional set-mounted radiator cooling outline:	
Optional heat exchanger cooling outline:	
Optional remote radiator cooling outline:	

Fuel consumption	**Standby**				**Prime**				**Continuous**
	kW (kVA)				**kW (kVA)**				**kW (kVA)**
Ratings	450 (563)				410 (513)				
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**Full**
US gph	10.8	17.4	23.4	30.1	10.2	16.2	21.9	27.7	
L/hr	41	66	89	114	39	61	83	105	

Engine	**Standby rating**	**Prime rating**	**Continuous rating**
Engine manufacturer	Cummins Inc.		
Engine model	QSX15-G9		
Configuration	Cast iron with replaceable wet cylinder liners, In-Line 6 cylinder		
Aspiration	Turbocharged and air-to-air after-cooled		
Gross engine power output, kW_m (bhp)	563.0 (755.0)	507.3 (680.0)	
BMEP at set rated load, kPa (psi)	2192.5 (318.0)	2006.4 (291.0)	
Bore, mm (in.)	136.9 (5.39)		
Stroke, mm (in.)	168.9 (6.65)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	10.1 (1995.0)		
Compression ratio	17.0:1		
Lube oil capacity, L (qt)	83.3 (88.0)		
Overspeed limit, rpm	2150 ± 50		
Regenerative power, kW	52.00		

Contract:	EWR-154.386
Transmittal #	152-263213-1
Submittal:	263213-A001-1
Submittal Description:	Emergency Generator Shop Drawings

Crisdel Group, Inc. has reviewed and confirmed Material Submittals is as per Contract Drawings and Specifications

Our energy working for you.™

Fuel flow	Standby rating	Prime rating	Continuous rating
Maximum fuel flow, L/hr (US gph)	423.9 (112.0)		
Maximum fuel inlet restriction, mm Hg (in Hg)	127.0 (5.0)		
Maximum return restriction, mm Hg (in Hg)	165.1 (6.5)		

Air			
Combustion air, m^3/min (scfm)	38.3 (1355.0)	36.8 (1300.0)	
Maximum air cleaner restriction, kPa (in H_2O)	6.2 (25.0)		
Alternator cooling air, m^3/min (cfm)	62.0 (2190.0)		

Exhaust			
Exhaust flow at set rated load, m^3/min (cfm)	87.9 (3105.0)	82.4 (2910.0)	
Exhaust temperature, °C (°F)	462.8 (865.0)	440.6 (825.0)	
Maximum back pressure, kPa (in H_2O)	10.2 (41.0)		

Standard set-mounted radiator cooling			
Ambient design, °C (°F)	40 (104)		
Fan load, kW_m (HP)	19 (25.5)		
Coolant capacity (with radiator), L (US gal)	57.9 (15.3)		
Cooling system air flow, m^3/min (scfm)	707.5 (25000.0)		
Total heat rejection, MJ/min (Btu/min)	19.6 (18485.0)	17.7 (16680.0)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		

Optional set-mounted radiator cooling			
Ambient design, °C (°F)	50 (122)		
Fan load, kW_m (HP)	19 (25.5)		
Coolant capacity (with radiator), L (US gal)	57.9 (15.3)		
Cooling system air flow, m^3/min (scfm)	707.5 (25000.0)		
Total heat rejection, MJ/min (Btu/min)	19.6 (18485.0)	17.7 (16680.0)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		

Contract:	EWR-154.385
Transmittal #	152-263213-1
Submittal:	263213-A001-1
Submittal Description:	Emergency Generator Shop Drawings

Crisdel Group, Inc. has reviewed and confirmed Material Submittals is as per Contract Drawings and Specifications

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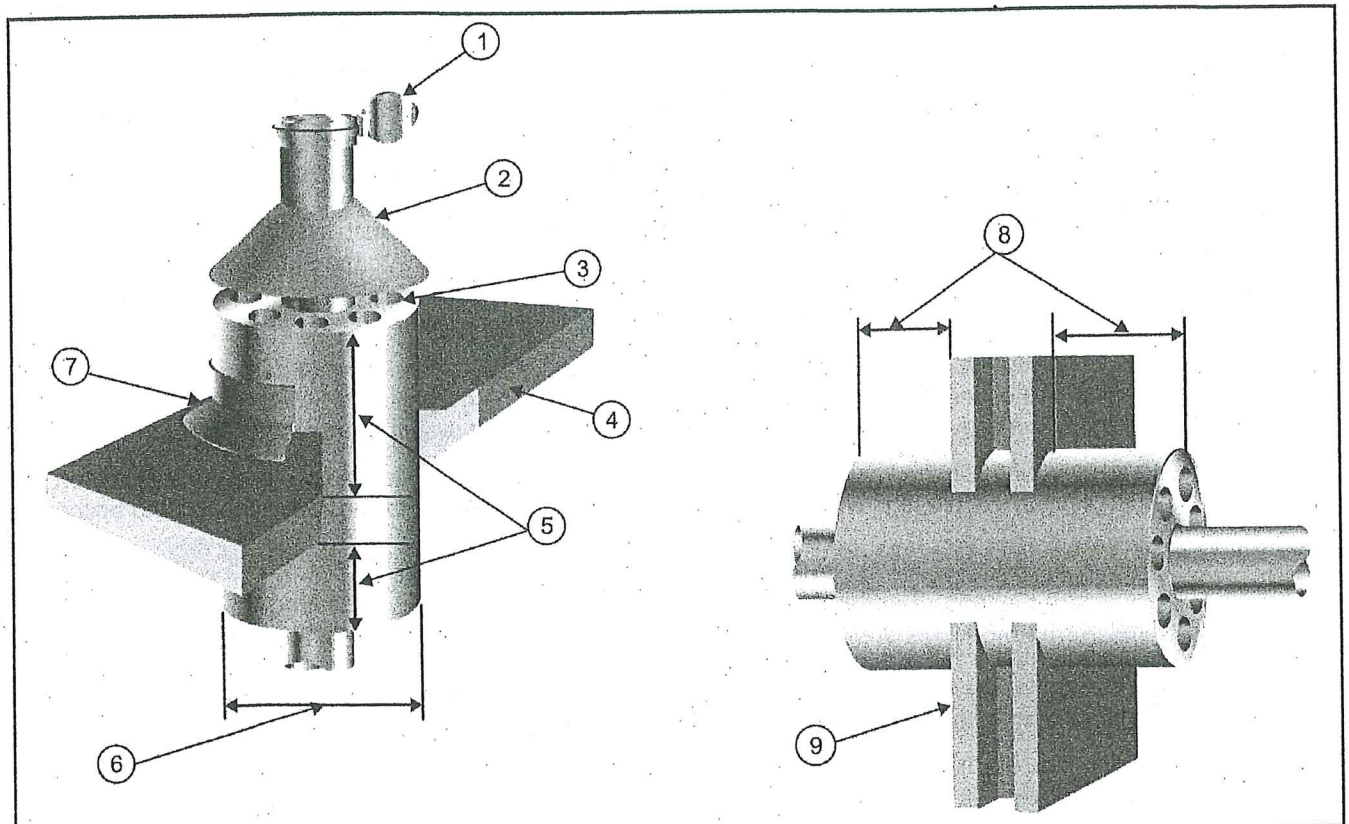


No.	Description	No.	Description
1	Rain Cap	6	Exhaust Pipe Diameter Plus 304 mm (12 Inches)
2	Drip Cap	7	Flashing
3	Holes in End of Inner Sleeve	8	230 mm (9 Inches) Minimum
4	Roof	9	Outside or Dividing Wall
5	230 mm (9 inches) Minimum		

FIGURE 10. EXHAUST THIMBLE

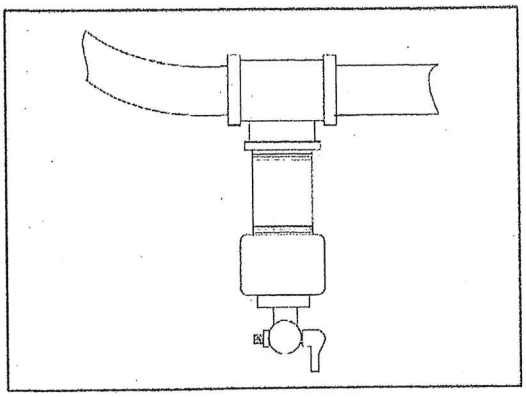


FIGURE 11. CONDENSATION TRAP

Contract:	EWR-154 386
Transmittal #	152-263213-1
Submittal:	263213-A001-1
Submittal Description:	Emergency Generator Shop Drawings

Crisdel Group, Inc has reviewed and confirmed Material Submittals is as per Contract Drawings and Specifications

Exhaust Emission Data Sheet

450DFEJ

60 Hz Diesel Generator Set
EPA NSPS Stationary Emergency

Engine Information:

Model:	Cummins Inc. QSX15-G9 NR 2	Bore:	5.39 in. (137 mm)
Nameplate BHP @ 1800 RPM:	755	Stroke:	6.65 in. (169 mm)
Type:	4 cycle, in-line, 6 cylinder diesel	Displacement:	912 cu. in. (14.9 liters)
Aspiration:	Turbocharged with air-to-air charge air cooling		
Compression Ratio:	17:1		
Emission Control Device:	Turbocharged with charge air-cooled		

Performance Data	1/4 Standby	1/2 Standby	3/4 Standby	Full Standby	Full Prime
Engine HP @ Stated Load (1800 RPM)	185	344	502	661	605
Fuel Consumption (gal/Hr)	10.6	17.4	23.6	30.3	28.0
Exhaust Gas Flow (CFM)	1360	2000	2605	3110	2920
Exhaust Gas Temperature (°F)	735	820	810	865	825
Exhaust Emission Data					
HC (Total Unburned Hydrocarbons)	0.22	0.08	0.06	0.12	0.11
NOx (Oxides of Nitrogen as NO_2)	2.97	3.31	4.20	4.00	3.66
CO (Carbon Monoxide)	0.52	0.31	0.37	0.35	0.32
PM (Particulate Matter)	0.08	0.05	0.04	0.02	0.02
Smoke (Pierburg)	0.47	0.40	0.38	0.19	0.18

All values (except smoke) are cited: g/BHP-hr

Test Methods and Conditions

Steady-state emissions recorded per ISO8178-1 during operation at rated engine speed (+/- 2%) and stated constant load (+/- 2%) with engine temperatures, pressures and emission rated stabilized.

Fuel specification:	40-48 Cetane Number, 0.05 Wt.% max. Sulfur; Reference ISO8178-5, 40CFR86.1313-98 Type 2-D and ASTM D975 No. 2-D.
Air Inlet Temperature:	25 °C (77 °F)
Fuel Inlet Temperature:	40 °C (104 °F)
Barometric Pressure:	100 kPa (29.53 in Hg)
Humidity:	10.7 g/kg (75 grains H_2O/lb) of dry air (required for NOx correction)
Intake Restriction:	Set to maximum allowable limit for clean filter
Exhaust Back Pressure:	Set to maximum allowable limit

Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subjected to instrumentation and engine-to-engine variability. Tests conducted with alternate test methods, instrumentation, fuel or reference conditions can yield different results.

2019 EPA Tier 2 Exhaust Emission Compliance Statement

450DFEJ

Stationary Emergency

60 Hz Diesel Generator Set

Compliance Information:

The engine used in this generator set complies with Tier 2 emissions limit of U.S. EPA New Source Performance Standards for stationary emergency engines under the provisions of 40 CFR 60 Subpart IIII.

Engine Manufacturer:	Cummins Inc.
EPA Certificate Number:	KCEXL015.AAJ-024
Effective Date:	10/03/2018
Date Issued:	10/03/2018
EPA Engine Family (Cummins Emissions Family):	KCEXL015.AAJ

Engine Information:

Model:	QSX/QSX15/QSX15-G/QSX15-G9	Bore:	5.93 in. (137 mm)
Engine Nameplate HP:	755	Stroke:	6.65 in. (169 mm)
Type:	4 Cycle, In-line, 6 Cylinder Diesel	Displacement:	912 cu. in. (15 liters)
Aspiration:	Turbocharged and CAC	Compression ratio:	17.0:1
Emission Control Device:	Electronic Control	Exhaust stack diameter:	8 in. (203 mm)

Diesel Fuel Emission Limits

D2 Cycle Exhaust Emissions

	Grams per BHP-hr			Grams per kWm-hr		
	NO_X + NMHC	CO	PM	NO_X + NMHC	CO	PM
Test Results	4.3	0.4	0.10	5.7	0.6	0.13
EPA Emissions Limit	4.8	2.6	0.15	6.4	3.5	0.20

Test methods: EPA nonroad emissions recorded per 40 CFR 89 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for constant speed engines (ref. ISO8178-4, D2)

Diesel fuel specifications: 40-48 Cetane number, Reference: ASTM D975 No. 2-D, 300-500 ppm Sulfur

Reference conditions: Air Inlet Temperature: 25 °C (77 °F), Fuel Inlet Temperature: 40 °C (104 °F), Barometric Pressure: 100 kPa (29.53 in Hg), Humidity: 10.7 g/kg (75 grains H2O/lb) of dry air; required for NOx correction, Restrictions: Intake Restriction set to a maximum allowable limit for clean filter; Exhaust Back Pressure set to a maximum allowable limit..

Tests conducted using alternate test methods, instrumentation, fuel or reference conditions can yield different results. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

EMERGENCY GENERATORS AND FIRE PUMPS

NEWARK LIBERTY INTERNATIONAL AIRPORT
PORT AUTHORITY OF NY & NJ

450 kW Emergency Generator (Bldg 43)

Pollutants	Emission Factor		
Nitrogen Oxides	4.00	g/bhp-hour	Per manufacturer's specification
Carbon Monoxide	0.35	g/bhp-hour	Per manufacturer's specification
Sulfur Dioxide	0.29	lbs/MMBTU	AP 42 Emission Factor
Particulates (10u)	0.02	g/bhp-hour	Per manufacturer's specification
Particulates (Total)	0.02	g/bhp-hour	Per manufacturer's specification
Volatile Organics (Total)	0.12	g/bhp-hour	Per manufacturer's specification

	25%	50%	75%	100%
Fuel Consumption Rate (gph)	10.6	17.4	23.6	30.3

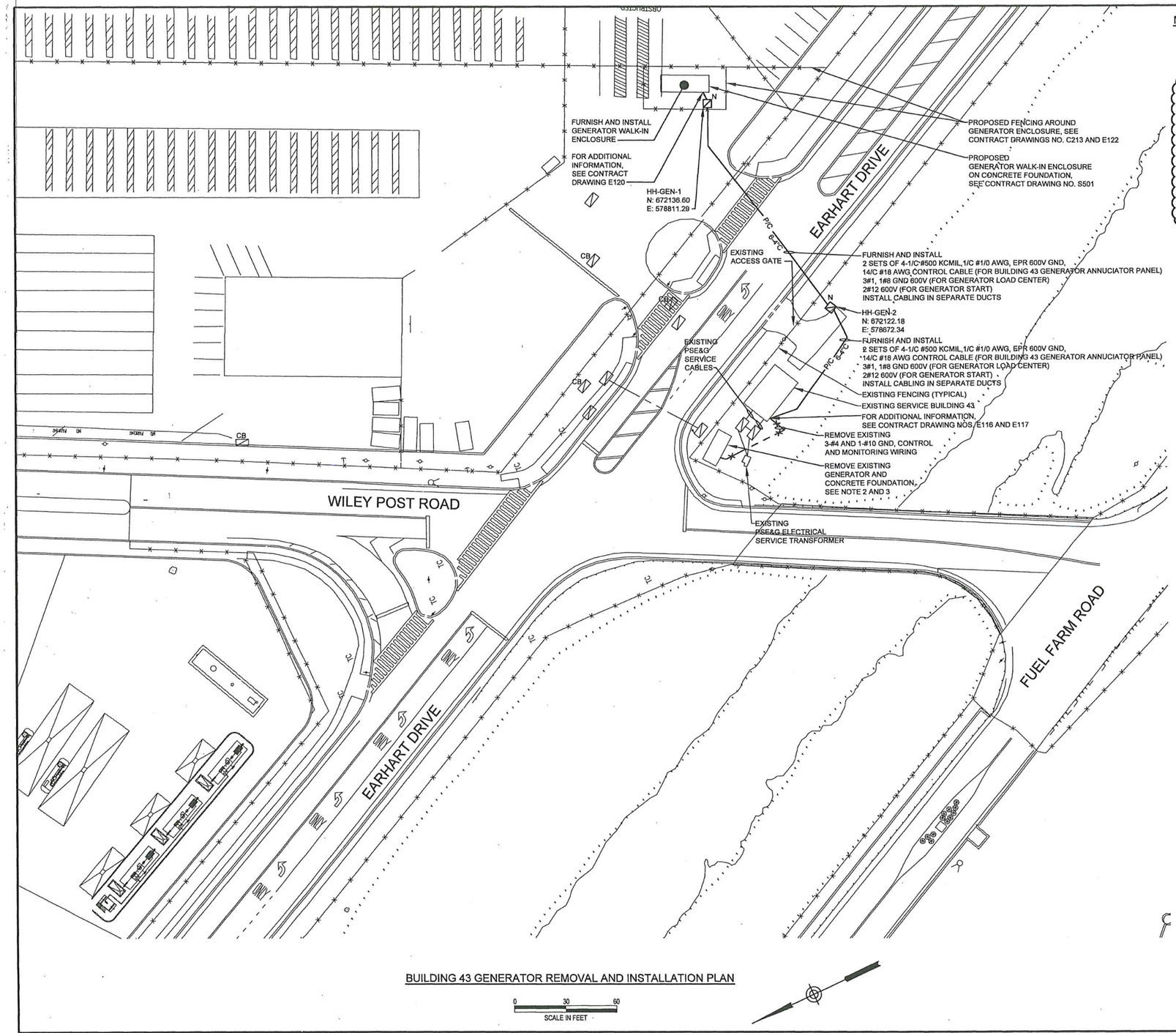
Generator Output:	450	kW
Engine Size:	755	BHP
Maximum Heat Input:	4.30	MMBTU/hr
Heating Value (Diesel):	137,000	BTU/gal
Operating hours (per year):	36	
Fuel Oil consumption:	1091	gal/yr

Emission Rates (lbs/hr) = Engine Size (bhp) x Emission Factor (g/bhp-hr) / 453.592 (g/lb)

Nitrogen Oxides =	755	(bhp)	x	4.000	g/bhp-hour /	453.592	(g/lb) =	6.66	lbs/hr
Carbon Monoxide =	755	(bhp)	x	0.350	g/bhp-hour /	453.592	(g/lb) =	0.58	lbs/hr
Sulfur Dioxide =	4.3	MMBTU/h	x	0.290	lbs/MMBT /			1.25	lbs/hr
Particulates (Total) =	755	(bhp)	x	0.020	g/bhp-hour /	453.592	(g/lb) =	0.03	lbs/hr
Particulates (10u) =	755	(bhp)	x	0.020	g/bhp-hour /	453.592	(g/lb) =	0.03	lbs/hr
Volatile Orgainics (Total) =	755	(bhp)	x	0.120	g/bhp-hour /	453.592	(g/lb) =	0.20	lbs/hr

Emission rates (tpy) = Emission Rate (lb/hr) x Operating Hours / 2000 (lb/ton)

Nitrogen Oxides =	6.66	(bhp)	x	36	(hr/yr)	/	2000	(lb/ton) =	0.12 tpy
Carbon Monoxide =	0.58	(bhp)	x	36	(hr/yr)	/	2000	(lb/ton) =	0.01 tpy
Sulfur Dioxide =	1.25	(bhp)	x	36	(hr/yr)	/	2000	(lb/ton) =	0.02 tpy
Particulates (10u) =	0.03	(bhp)	x	36	(hr/yr)	/	2000	(lb/ton) =	0.00 tpy
Particulates (Total) =	0.03	(bhp)	x	36	(hr/yr)	/	2000	(lb/ton) =	0.00 tpy
Volatile Organics (Total) =	0.20	(bhp)	x	36	(hr/yr)	/	2000	(lb/ton) =	0.00 tpy



BUILDING 43 GENERATOR REMOVAL AND INSTALLATION PLAN

0 30 60
SCALE IN FEET

NOTES:

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL ELECTRICAL NOTES, SEE CONTRACT DRAWING NOS. E101 AND E102. FOR EQUIPMENT SCHEDULE, SEE CONTRACT DRAWING NO. E103.
2. REMOVE EXISTING GENERATOR AND 375 GALLON FUEL TANK AFTER COMMISSIONING GENERATOR WITHIN WALK-IN ENCLOSURE. THE EXISTING GENERATOR MAY BE NECESSARY FOR BACK-UP POWER DURING TRANSITION TO THE FURNISHED AND INSTALLED GENERATOR. THE CONTRACTOR SHALL LOAD, TRANSPORT, AND UNLOAD THE EXISTING GENERATOR AT THE FOLLOWING LOCATION:

   CENTRAL AUTOMOTIVE DIVISION
   THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
   PORT AUTHORITY TECHNICAL CENTER
   241 ERIE STREET
   JERSEY CITY, NJ 07310
   ATTN: DIVISION MANAGER DAVID BOBBIT
3. COORDINATE FUEL REMOVAL AND DISPOSAL WITH THE ENGINEER PRIOR TO REMOVAL OF EXISTING GENERATOR. FUEL MUST BE DISPOSED OF PER APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.

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THE PORT AUTHORITY OF NY & NJ

BURNS ENGINEERING, INC
1261 BROADWAY, SUITE 708 NEW YORK, NY 10001
JOHN E. BURNS, P.E.
NJ Professional Engineer # GE04656500
NJ Certificate of Authorization # 24GA2800400

No.	Date	Revision	Approved
1	12/4/2018	Conformed to Addendum No. 6	

ENGINEERING DEPARTMENT

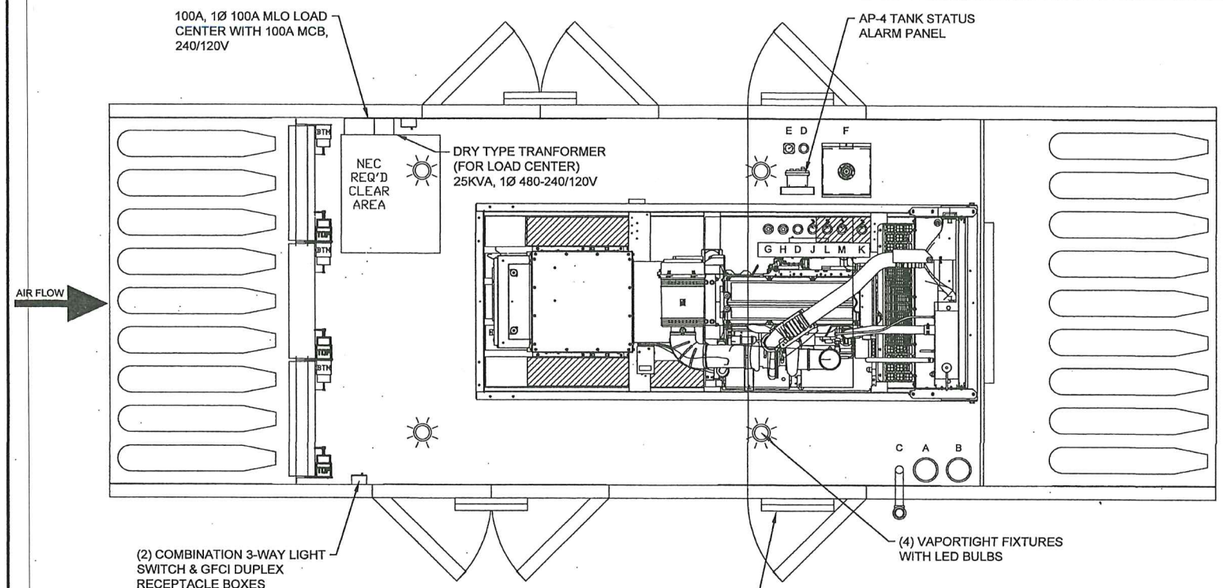
NEWARK
LIBERTY
INTERNATIONAL
AIRPORT

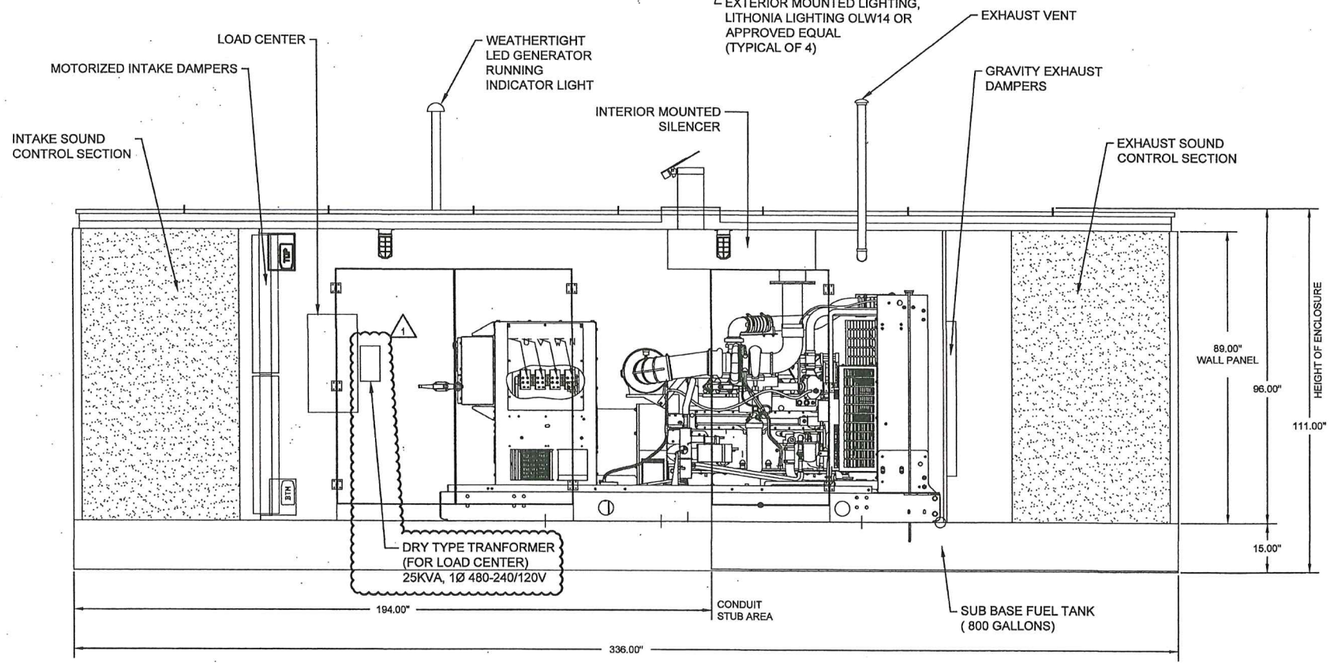
ELECTRICAL

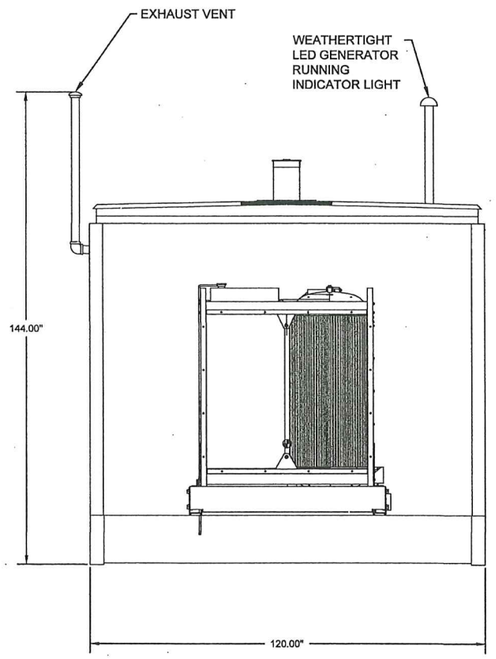
Title
TERMINAL A REDEVELOPMENT PROGRAM
AIRSIDE UTILITY AND PAVING SOUTH - PHASE 2

BUILDING 43 GENERATOR REMOVAL AND INSTALLATION PLAN

Designed by	J. BERNHARDT / K. OGAWA
Drawn by	J. BERNHARDT / K. OGAWA
Checked by	S. MULLEN / C. DENNIE
Date	9/25/2018
Contract Number	EWR-154.386
Drawing Number	E115
	PID# 17038000







GENERATOR PLAN AND ELEVATION

NTS

NOTES:

1. FOR LEGEND, ABBREVIATIONS AND ELECTRICAL GENERAL NOTES SEE CONTRACT DRAWING NOS. E101 AND E102. FOR EQUIPMENT SCHEDULE, SEE CONTRACT DRAWING NO. E103.
2. COORDINATE LOCATION OF ALL STUB UPS WITH GENERATOR MANUFACTURER, PRIOR TO POURING CONCRETE FOUNDATION. SEE CIVIL CONTRACTOR DRAWINGS FOR FOUNDATION DETAILS.
3. ALL GENERATOR AUXILIARIES, INCLUDING BATTERY CHARGER, JACKET HEATER, LIGHTS, RECEPTACLES, STROBES AND DAMPERS SHALL BE PREWIRED TO THE LOAD CENTER AT THE FACTORY PRIOR TO DELIVERY TO THE SITE.
4. FOR GROUNDING DETAILS, SEE CONTRACT DRAWING E121.
5. FOR FOUNDATION SITING, SEE CIVIL CONTRACT DRAWINGS.
6. FURNISH AND INSTALL EXTERNAL WEATHER TIGHT LED GENERATOR RUNNING INDICATOR LIGHT. LIGHT SHALL ILLUMINATE WHEN GENERATOR IS RUNNING.
7. FURNISH AND INSTALL STAIRS WITH HANDRAILS AT EACH GENERATOR ENCLOSURE ACCESS DOOR. THE STAIRS SHALL BE CONSTRUCTED OF GALVANIZED STAINLESS STEEL AND INCLUDE HAND RAILINGS FOR ACCESS TO THE ENCLOSURE. THE STAIRS SHALL BE LEVEL AND SHALL MEET THE HEIGHT REQUIREMENTS OF THE ENCLOSURE FOUNDATION. THE DOOR OPENINGS SHALL NOT BE OBSTRUCTED AND SHALL MEET THE GENERATOR ENCOSURE MANUFACTURER'S DOOR SWING AND ACCESS OPENING DIMENSIONS. THE STAIRS AND HANDRAILS SHALL BE BONDED TO THE GROUNDING RING WITH #1/0 COPPER COUNTERPOISE WITH UL APPROVED MECHANICAL GROUNDING CLAMPS. THE COUNTERPOISE SHALL BE EXOTHERMICALLY WELDED TO THE GROUNDING RING. SUBMIT GENERATOR ENCLOSURE STAIRS CONSTRUCTION COMPLETE WITH ALL DIMENSIONS AND CONNECTIONS FOR REVIEW BY THE ENGINEER.

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THE PORT AUTHORITY OF NY & NJ

BURNS ENGINEERING, INC
1261 BROADWAY, SUITE 708 NEW YORK, NY 10001

DEVONNE M. JACKSON, P.E.
NJ Professional Engineer # GE04457300
NJ Certificate of Authorization # 24GA2800400

No.	Date	Revision	Approved
1	10/12/2018	Addendum No. 1	

ENGINEERING DEPARTMENT

NEWARK LIBERTY INTERNATIONAL AIRPORT

ELECTRICAL

Title

TERMINAL A REDEVELOPMENT PROGRAM
AIRSIDE UTILITY AND PAVING SOUTH - PHASE 2

BUILDING 43 GENERATOR PLAN AND ELEVATION

Designed by	J. BERNHARDT / K. OGAWA
Drawn by	J. BERNHARDT / K. OGAWA
Checked by	S. MULLEN / C. DENNIE
Date	9/25/2018
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