

STATEMENT OF BASIS for WEST DEPTFORD ENERGY LLC

TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION

Program Interest (PI): 56078 / Permit Activity Number: BOP190001

I. FACILITY INFORMATION

West Deptford Energy LLC is located at 3 Paradise Road, West Deptford, NJ 08066, Gloucester County and consists of natural-gas fired combined-cycle turbine power generating facility. The facility is owned and operated by West Deptford Energy LLC., which is owned by LS Power.

The facility is classified as a major facility based on its potential to emit: 38.4 tons per year of volatile organic compounds (VOC), 185 tons per year of nitrogen oxides (NOx), 480 tons per year of carbon monoxide (CO), and 2.27 million tons per year of greenhouse gases in a carbon dioxide equivalent (CO_{2e}) basis.

This permit allows individual hazardous air pollutant (HAP) to be emitted at a rate to not exceed: 220 lb per year of acrolein, 8740 lb per year of formaldehyde, 80 lb per year of POM, and 4640 lb per year of toluene, 1420 lb per year of acetaldehyde, 0.4 lb per year of arsenic, 440 lb per year of benzene, 20 lb per year of 1,3-butadiene, 2.6 lb per year of cadmium, 0.2 lb per year of cobalt, 0.04 lb per year of 7,12-dimethylbenz(a)anthracene, 1140 lb per year of ethylbenzene, 40 lb per year of naphthalene, 4.8 lb per year of nickel, 1.2 lb per year of lead and 1040 lb per year of propylene oxide.

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 (SO₂), nitrogen dioxide (NO₂), 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: two 384 MW combined-cycle combustion turbine generators (each with a duct burner), two 6-cell wet mechanical cooling towers draft cooling tower, 40 MM Btu/hr auxiliary boiler, 282 hp diesel fire water pump, three 4 MW Black Start Generators and 1000 KW emergency diesel engine-driven generator. The facility controls Nitrogen Oxide (NOx) emissions by using a dry low-NOx (DLN) combustion system on the combustion turbines along with selective catalytic reduction (SCR) on the combustion turbines/duct burners. WDE uses an oxidation catalyst to reduce Carbon Monoxide (CO) and Volatile Organic Compounds (VOC) emissions from the combustion turbines/duct burners.

A Facility-Wide Risk Assessment was conducted on May 4, 2020 and health risk was determined to be negligible consistent with NJDEP Technical Manual 1003.

This significant permit modification is being proposed for the following changes in the operating permit:

- (1) To increase TSP emission limits and to revise the monitoring requirements to base compliance with all stack-tested pollutant emission limits on the average of three Department validated stack test runs in emission unit U1,
- (2) To add a CO₂ budget source (RGGI Rule) in accordance with N.J.A.C. 7:27C-3.3,
- (3) To reduce the frequency of PM-10 and PM-2.5 stack testing from every quarter to at least 18 months prior to the expiration of the renewal operating permit,
- (4) To revise U7 to reflect that West Deptford Energy constructed three (3) not four (4) black start generators, U7 OS Summary annual emission limits have been reduced to reflect this change,
- (5) HAPs emissions from emission unit U1 were added based on the new Subchapter 17 reporting thresholds. HAPs added include: acetaldehyde, arsenic, benzene, 1,3-butadiene, cadmium, cobalt, 7,12-dimethylbenz(a)anthracene, ethylbenzene, naphthalene, nickel, and propylene oxide.
- (6) Methane and Nitrous oxide emissions from turbines, emergency generator, aux boiler and black start generators were added based on AP-42 calculations.

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(7) Also, Insignificant Source IS6 (2 Off-site Metering Station Emergency Generators <1MMBtu/hr) was never constructed, therefore, IS6 has been removed from the permit.

This modification will also change the facility-wide emission limits as listed in the following table:

Allowable Emission Limits	Facility's Potential Emissions (tons per year)*									
	VOC (total)	NO _x	CO	SO ₂	TSP (total)	PM ₁₀ (total)	PM _{2.5} (total)	Pb	HAPs (total)	CO ₂ e (total)
Current Permit	38.4	187.6	480	6	26.5	90.2	86.9	0.0006	6.8	2,271,673
Proposed Permit	38.4	185	480	6	29.6	90.2	86.9	0.0006	8.9	2,271,673
Change (+ / -)	0	-2.6	0	0	3.1	0	0	0	2.1	0

VOC Volatile Organic Compounds

NO_x Nitrogen Oxides

CO Carbon Monoxide

SO₂ Sulfur Dioxide

TSP Total Suspended Particulates

* Other Any other air contaminant regulated under the Federal Clean Air Act. There is no change to the ammonia and Sulfuric acid emissions.

PM₁₀ Particulates under 10 microns

PM_{2.5} Particulates under 2.5 microns

Pb Lead

HAPs Hazardous Air Pollutants

CO₂e Carbon Dioxide equivalent

IV. CASE-BY-CASE DETERMINATIONS

No case-by-case determinations were required for this modification.

V. EMISSION OFFSET REQUIREMENTS

This modification is not subject to Emission Offset requirements.

VI. 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:

- 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
- 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.

Equipment / Emission Unit

U1 Combustion Turbines/Duct Burners: The facility monitors natural gas use as the surrogate for the short-term and long-term (TPY) emissions limits for SO₂, Sulfuric Acid, and HAPs.

- 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,
 - Subject equipment being permitted at the maximum rated capacity,

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- 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.

VII. APPLICABLE STATE AND FEDERAL RULES

This modification 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>

This modification is also subject to Federal regulations listed below.

40 CFR Part 52.21:	Prevention of Significant Deterioration
NSPS - Subpart A:	Standards of Performance for New Stationary Sources: General Provisions
NSPS - Subpart KKKK:	Standards of Performance for Stationary Combustion Turbines
40 CFR Part 72:	Acid Rain Permit
40 CFR Part 97:	Cross State Air Pollution Rule.

The Greenhouse Gas (GHG) emissions from this facility are 2,271,673 TPY CO₂e and there is no GHG emission increase.

VIII. 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.

This operating permit 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.

Prior to the expiration of the Operating Permit's five-year term, the facility will be required to apply for a renewal, at which time the Department will evaluate the facility and issue a public notice with its findings.

IX. 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.

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