

STATEMENT OF BASIS for GILBERT GENERATING STATION

TITLE V OPERATING PERMIT RENEWAL

Program Interest (PI): 80002 / Permit Activity Number: BOP170002

I. FACILITY INFORMATION

Gilbert Generating Station is located at 315 Riegelsville Road, Holland, NJ 08848, Hunterdon County and consists of power generating station with 5 combustion turbines combusting natural gas and # 2 fuel oil. The facility is owned by GenOn Holdings, Inc., and operated by Gilbert Power LLC.

The facility is classified as a major facility based on its potential to emit 40.46 tons per year of volatile organic compounds, 503.7 tons per year of nitrogen oxides, 1770.4 tons per year of carbon monoxide, 5.15 tons per year of sulfur dioxide, 61 tons per year of total suspended particulate matter or TSP, 45.3 tons per year of PM-10 and 45.3 tons per year of PM-2.5 to the atmosphere.

This permit allows individual hazardous air pollutant to be emitted at a rate to not exceed: 105.2 pounds per year of acrolein, 231 pounds per year of benzene, 2.6 pounds per year of lead compounds and 211.4 pounds per year of nickel compounds.

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: 5 combustion turbines, one # 2 fuel oil fired boiler, emergency diesel generator and emergency diesel fire pump.

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.

A Facility-Wide 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 Modification with Renewal and includes the following changes: addition of hazardous air pollutant (HAP) emissions from the facility's four STAG turbines (U2210 - U2213) and CT9 (U2323). HAP emissions per operating scenario are outlined below:

U2210, U2211, U2212 and U2213, OS Summary:

Acrolein = 0.012 tpy (per unit), Benzene = 0.022 tpy (per unit)

U2210, U2211, U2212 and U2213, OS3 (PNG fired, combined cycle HRSG), OS4 (PNG fired, simple cycle bypass):

Acrolein = 0.0063 lb/hr, Benzene = 0.012 lb/hr

U2323, OS Summary:

Acrolein = 0.0054 tpy, Benzene = 0.027 tpy, Lead = 0.0013 tpy, Nickel = 0.106 tpy

U2323, OS1 (Gas, > 80% load) and OS3 (Gas, < or = 80% load):

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Acrolein = 0.012 lb/hr, Benzene = 0.022 lb/hr

U2323, OS2 (Oil, > 80% load) and OS4 (Oil, < or = 80% load):
Benzene = 0.1 lb/hr, Lead = 0.008 lb/hr, Nickel = 0.64 lb/hr

The Operating Permit Renewal Application consists of the following minor administrative changes:

- * Addition of a 207 hp emergency generator as U2520,
- * Addition of a 1,995-gallon gasoline storage tank to the permit as Insignificant Source IS7,
- * Addition of a 7 cell cooling tower (raw material combined weight < 50 lb/hr, excluding water) as Insignificant Source IS9,
- * Addition of a surface/parts cleaner as IS8,
- * Corrections to one fuel oil storage tank in IS6,
- * Correct E10, E11, E12 and E13 (U2210 through U2213) turbine model from 7EA to 7B.
- * Removal of oil fired permit conditions associated with U2210, U2211, U2212 and U2213 Combined Cycle Units with Heat Recovery Steam Generators,
- * Removal of U2315, U2316, U2317 and U2318 simple cycle combustion turbines as these were retired in 2015 as per the minor modification application submitted in February 2017,
- * Correction to the stack diameter for CT9 (PT23). The correct stack inner diameter for PT23 is 215 inches,
- * Revisions to GR1 Turbine Test to reflect the removal of U2315, U2316, U2317 and U2318 (E15 through E18). This revision was requested as part of the minor modification application submitted in February 2017,
- * Incorporate hourly and annual PM-10 emissions for the STAG units (U2210, U2211, U2212 and U2213 OS3 & 4, Ref #12 and OS Summary Ref #13) to 4.73 lb/hr and 8.89 tpy, respectively. These revisions are consistent with the May 2015 significant modification application and are based on the required PM-10 stack testing that was completed in accordance with permit conditions U2210, U2211, U2212, U2213, OS Summary, Reference # 13 and U2210, OS3/OS4, Reference #12.
- * The nominal heat input rating of the STAG Units was 870 MMBtu/hr when the 0.51 lb/hr SO2 limit was established in the pre-construction permit; in 2002, Reliant Energy asked to have the heat input limit increased to unit maximum of 985.68 MMBtu/hr, and the Department agreed, however, the corresponding hourly SO2 limit was not adjusted at the time. Consistent with the previously permitted heat input limitation increase from 870 MMBtu/hr to 985.68 MMBtu/hr in 2002, please increase in the SO2 lb/hr emission rate (U2210, U2211, U2212, and U2213; OS3 & 4 Ref. # 15) from 0.51 lb/hr to 0.59 lb/hr and annual SO2 tpy emissions from 0.96 tpy to 1.11 tpy (U2210 - U2213, OS Summary Ref # 11).

The changes made during this permitting action result in allowable annual emissions changes as follows:

Allowable Emission Limits	Potential to Emit (tons per year)										
	VOC (total)	NO _x	CO	SO ₂	TSP (total)	Other (total)	PM ₁₀ (total)	PM _{2.5} (total)	Pb	HAPs (total)	CO ₂ e (total)
Current PTE	40.22	503.7	1770.4	5.15	61	NA	61.8	NA	0.02	0.02	2,372,829
Proposed PTE	40.46	503.7	1770.4	5.15	61	NA	45.3	45.3	0.0013	0.2753	2,372,829
Change (+ / -)	+0.24	0	0	0	0	NA	-16.5	+45.3	-0.0187	+0.2553	0

VOC	Volatile Organic Compounds	PM ₁₀	Particulates under 10 microns
NO _x	Nitrogen Oxides	PM _{2.5}	Particulates under 2.5 microns
CO	Carbon Monoxide	Pb	Lead
SO ₂	Sulfur Dioxide	HAPs	Hazardous Air Pollutants
TSP	Total Suspended Particulates	CO ₂ e	Carbon Dioxide equivalent
Other	Any other air contaminant regulated under the Federal Clean Air Act		

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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.

Equipment:

Boiler

For boiler in U2406, the facility monitors fuel use as the surrogate for the long-term (TPY) emission limits for VOC, NO_x, CO, SO₂, TSP, PM-10 and PM-2.5. Surrogate monitoring for the short-term (lb/hr) emission limits are combustion process adjustment for NO_x and CO, and fuel oil sulfur content for SO₂.

Combustion Turbines

For combustion turbines, the facility monitors the fuel use as the surrogate for the long-term (TPY) emissions limits for VOC, NO_x, CO, SO₂, TSP, PM-10 and PM-2.5. Surrogate monitoring for the short-term (lb/hr) emission limits are combustion process adjustment for NO_x and CO, ratio of water to fuel being fired in the turbine for NO_x, and fuel oil sulfur content for SO₂.

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,
 - 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 also subject to Federal regulations listed below.

NSPS Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

MACT Subpart A: General Provisions

MACT Subpart ZZZZ: National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

MACT Subpart JJJJJJ: National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, and Institutional boilers area sources.

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40 CFR Part 97: Cross-State Air Pollution Rule (CSAPR)

The Greenhouse Gas (GHG) emissions from this facility are 2,372,829 TPY CO₂e 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

GILBERT GENERATING STATION
BOP170002

PI 80002

New Jersey Department of Environmental Protection
Operating Permit Revision History

Permit Activity Number	Type of Revision	U/BP NJID	Description of Revision	Final Action Date
BOP190002	Minor Modification		This Title V Minor Modification application incorporates relevant provisions of the New Jersey CO2 Budget Trading Program (N.J.A.C. 7:27C) for affected units at its Gilbert Generating Station.	01/13/20
BOP190001	Administrative Amendment		This Administrative Amendment application is to change the ownership of the facility as required under N.J.A.C. 7:27-22.20(b). The facility, formerly owned by NRG REMA LLC will change owners to Gilbert Power LLC on July 15, 2019. In addition, the application includes changes to the facility contacts.	07/30/19
BOP170001	Minor Modification		The purpose of this minor modification application is to remove the four simple cycle combustion turbines (U2315, U2316, U2317 and U2318) and associated equipment (E15 through E18) and emission points (PT15 through PT18) that were retired in 2015. As a result of these units being retired, this application is also requesting revisions to the GR1 (Turbine Test) conditions to reflect the removal of these units and a reduction in facility-wide potential emissions.	05/19/17
BOP160001	Minor Modification		This permit application is submitted to propose a new limit for PM10 emissions from combustion turbine No. 9 (U2323) based on recent stack test data.	06/27/16

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