



# State of New Jersey

Department of Environmental Protection

Air Quality, Energy and Sustainability

Division of Air Quality

Bureau of Stationary Sources

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Trenton, NJ 08625-0420

PHILIP D. MURPHY

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Commissioner

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Lt. Governor

## Air Pollution Control Operating Permit Renewal with Significant Modification

**Permit Activity Number: BOP180002**

**Program Interest Number: 75476**

Mailing Address	Plant Location
PAUL OSTBERG GENERAL MANAGER CALPINE NEW JERSEY GENERATION 4001 E MAIN ST Millville, NJ 08332	SHERMAN AVE ENERGY CENTER 2600 Orch Rd & Sherman Ave Vineland Cumberland County

**Initial Operating Permit Approval Date: August 19, 1999**

**Operating Permit Approval Date: Proposed**

**Operating Permit Expiration Date: August 18, 2019**

### **AUTHORITY AND APPLICABILITY**

The New Jersey Department of Environmental Protection (Department) approves and issues this Air Pollution Control Operating Permit under the authority of Chapter 106, P.L. 1967 (N.J.S.A. 26:2C-9.2). This permit is issued in accordance with the air pollution control permit provisions promulgated at Title V of the Federal Clean Air Act, 40 CFR 70, Air Pollution Control Act codified at N.J.S.A. 26:2C and New Jersey State regulations promulgated at N.J.A.C. 7:27-22.

The Department approves this operating permit based on the evaluation of the certified information provided in the permit application that all equipment and air pollution control devices regulated in this permit comply with all applicable State and Federal regulations. The facility shall be operated in accordance with the conditions of this permit. This operating permit supersedes any previous Air Pollution Control Operating Permits issued to this facility by the Department including any general operating permits, renewals, significant modifications, minor modifications, seven-day notice changes or administrative amendments to the permit.

Changes made through this permit activity are provided in the Reason for Application.

### **PERMIT SHIELD**

This operating permit includes a permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17.

### **COMPLIANCE SCHEDULES**

This operating permit does not include compliance schedules as part of the approved compliance plan.

## **COMPLIANCE CERTIFICATIONS AND DEVIATION REPORTS**

The permittee shall submit to the Department and to United States Environmental Protection Agency (US EPA) periodic compliance certifications, in accordance with N.J.A.C. 7:27-22.19. **The annual compliance certification** is due to the Department and EPA within 60 days after the end of each calendar year during which this permit was in effect. **Semi-annual deviation reports** relating to compliance testing and monitoring are due to the Department within 30 days after the end of the semi-annual period. The schedule and additional details for these submittals are available in Subject Item - FC, of the Facility Specific Requirements of this permit.

## **ACCESSING PERMITS**

The facility's current approved operating permit and any previously issued permits (e.g. superseded, expired, or terminated) are available for download in 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 Interest (PI) Number as instructed on the screen. If needed, the RADIUS file for your permit, containing Facility Specific Requirements (Compliance Plan), Inventories and Compliance Schedules can be obtained by contacting the Helpline number given below. RADIUS software, instructions, and help are available at the Department's website at <http://www.nj.gov/dep/aqpp>.

## **HELPLINE**

The Operating Permit Helpline is available for any questions at (609) 633-8248 from 9:00 AM to 4:00 PM Monday to Friday.

## **RENEWING YOUR OPERATING PERMIT AND APPLICATION SHIELD**

The permittee is responsible for submitting a timely and administratively complete operating permit renewal application pursuant to N.J.A.C. 7:27-22.30. Only applications which are timely and administratively complete are eligible for an application shield. The details on the contents of the renewal application, submittal schedule, and application shield are available in Section B - General Provisions and Authorities of this permit.

## **COMPLIANCE ASSURANCE MONITORING**

Facilities 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. The rule and guidance on how to prepare a CAM Plan can be found at EPA's website: <https://www.epa.gov/air-emissions-monitoring-knowledge-base/compliance-assurance-monitoring>. In addition, CAM Plans must be included as part of the permit renewal application. Facilities that do not submit a CAM Plan may have their permit applications denied, pursuant to N.J.A.C. 7:27-22.3.

## **ADMINISTRATIVE HEARING REQUEST**

If, in your judgment, the Department is imposing any unreasonable condition of approval, you may contest the Department's decision 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 specified in N.J.A.C. 7:27-1.32 and the information on the [NJ04 - Administrative Hearing Request Checklist and Tracking Form](#) available at <https://www.state.nj.us/dep/aqpp/applying.html>.

If you have any questions regarding this permit approval, please call Michael Hogan at (609) 633-1124.

Approved by:

\_\_\_\_\_  
Aliya M. Khan

Enclosure

CC: Suilin Chan, United States Environmental Protection Agency, Region 2

**Facility Name: SHERMAN AVE ENERGY CENTER**  
**Program Interest Number: 75476**  
**Permit Activity Number: BOP180002**

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## Section A

**Facility Name: SHERMAN AVE ENERGY CENTER**

**Program Interest Number: 75476**

**Permit Activity Number: BOP180002**

### **POLLUTANT EMISSIONS SUMMARY**

Table 1: Total emissions from all Significant Source Operations<sup>1</sup> at the facility.

Facility's Potential Emissions from all Significant Source Operations (tons per year)										
Source Categories	VOC (total)	NO <sub>x</sub>	CO	SO <sub>2</sub>	TSP (total)	PM <sub>10</sub> (total)	PM <sub>2.5</sub> (total)	Pb	HAPs* (total)	CO <sub>2e</sub> <sup>2</sup>
Emission Units Summary	19.4	122	149	3.44	10.6	15.4	15.4	0.0108	2.29	
Batch Process Summary	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	
Group Summary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
<b>Total Emissions</b>	19.4	122	149	3.44	10.6	15.4	15.4	.0108	2.29	155,046

Table 2: Estimate of total emissions from all Insignificant Source Operations<sup>1</sup> and total emissions from Non-Source Fugitives at the facility.

Emissions from all Insignificant Source Operations and Non-Source Fugitive Emissions (tons per year)									
Source Categories	VOC (total)	NO <sub>x</sub>	CO	SO <sub>2</sub>	TSP (total)	PM <sub>10</sub> (total)	PM <sub>2.5</sub> (total)	Pb	HAPs (total)
Insignificant Source Operations	0.41	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
Non-Source Fugitive Emissions <sup>3</sup>	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A

VOC: Volatile Organic Compounds

NO<sub>x</sub>: Nitrogen Oxides

CO: Carbon Monoxide

SO<sub>2</sub>: Sulfur Dioxide

N/A: Indicates the pollutant is not emitted or is emitted below the reporting threshold specified in N.J.A.C. 7:27-22, Appendix, Table A and N.J.A.C. 7:27-17.9(a).

TSP: Total Suspended Particulates

Other: Any other air contaminant

regulated under the Federal CAA

PM<sub>10</sub>: Particulates under 10 microns

PM<sub>2.5</sub>: Particulates under 2.5 microns

Pb: Lead

HAPs: Hazardous Air Pollutants

CO<sub>2e</sub>: Carbon Dioxide equivalent

\*Emissions of individual HAPs are provided in Table 3 on the next page.

Emissions of "Other" air contaminants are provided in Table 4 on the next page.

<sup>1</sup> Significant Source Operations and Insignificant Source Operations are defined at N.J.A.C. 7:27-22.1.

<sup>2</sup> Total CO<sub>2e</sub> emissions for the facility that includes all Significant Source Operations (emission units, batch process, group) and Insignificant Source Operations.

<sup>3</sup> Non-Source Fugitive Emissions are defined at N.J.A.C. 7:27-22.1 and are included if the facility falls into one or more categories listed at N.J.A.C. 7:27-22.2(a)2.

**Section A**

**Facility Name: SHERMAN AVE ENERGY CENTER**

**Program Interest Number: 75476**

**Permit Activity Number: BOP180002**

**POLLUTANT EMISSIONS SUMMARY**

Table 3: Summary of Hazardous Air Pollutants (HAP) Emissions from Significant Source Operations <sup>4</sup>:

HAP	TPY
Acetaldehyde	0.099
Acrolein	0.053
Arsenic	0.00851
Benzene	0.0694
Beryllium	0.00024
Butadiene (1, 3-)	0.0237
Cadmium	0.00372
Ethylbenzene	0.0413
Ethylene dibromide	0.000362
Formaldehyde	1.26
Lead	0.0108
Manganese	0.6115
Napthalene	0.0287
Nickel	0.00356
PAH	0.031
Propylene Oxide	0.0374
1,1,2,2,-Tetrachloroethane	0.00043

Table 4: Summary of “Other” air contaminants emissions from Significant Source Operations:

Other Air Contaminant	TPY
Methane	2.87
Nitrous Oxide	0.287

<sup>4</sup> Do not sum the values below for the purpose of establishing a total HAP potential to emit. See previous page for the allowable total HAP emissions.

## Section B

**Facility Name: SHERMAN AVE ENERGY CENTER**

**Program Interest Number: 75476**

**Permit Activity Number: BOP180002**

### GENERAL PROVISIONS AND AUTHORITIES

1. No permittee shall allow any air contaminant, including an air contaminant detectable by the sense of smell, to be present in the outdoor atmosphere in a quantity and duration which is, or tends to be, injurious to human health or welfare, animal or plant life or property, or which would unreasonably interfere with the enjoyment of life or property. This shall not include an air contaminant that occurs only in areas over which the permittee has exclusive use or occupancy. Requirements relative only to nuisance situations, including odors, are not considered federally enforceable. [N.J.A.C. 7:27-22.16(g)8]
2. Any deviation from operating permit requirements which results in a release of air contaminants shall be reported to the Department as follows:
  - a. If the air contaminants are released in a quantity or concentration which poses a potential threat to public health, welfare or the environment or which might reasonably result in citizen complaints, the permittee shall report the release to the Department:
    - i. Immediately on the Department hotline at 1-(877) 927-6337, pursuant to N.J.S.A. 26:2C-19(e); and
    - ii. As part of the compliance certification required in N.J.A.C. 7:27-22.19(f). However, if the deviation is identified through source emissions testing, it shall be reported through the source emissions testing and monitoring procedures at N.J.A.C. 7:27-22.18(e)3; or
  - b. If the air contaminants are released in a quantity or concentration which poses no potential threat to public health, welfare or the environment and which will not likely result in citizen complaints, the permittee shall report the release to the Department as part of the compliance certification required in N.J.A.C. 7:27-22.19(f), except for deviations identified by source emissions testing reports, which shall be reported through the procedures at N.J.A.C. 7:27-22.18(e)3; or
  - c. If the air contaminants are released in a quantity or concentration which poses no potential threat to public health, welfare or the environment and which will not likely result in citizen complaints, and the permittee intends to assert the affirmative defense afforded by N.J.A.C. 7:27-22.16(l), the violation shall be reported by 5:00 PM of the second full calendar day following the occurrence, or of becoming aware of the occurrence, consistent with N.J.A.C. 7:27-22.16(l). [N.J.A.C. 7:27-22.19(g)]
3. The permittee shall comply with all conditions of the operating permit including the approved compliance plan. Any non-compliance with a permit condition constitutes a violation of the New Jersey Air Pollution Control Act N.J.S.A. 26:2C-1 et seq., or the CAA, 42 U.S.C. §7401 et seq., or both, and is grounds for enforcement action; for termination, revocation and reissuance, or for modification of the operating permit; or for denial of an application for a renewal of the operating permit. [N.J.A.C. 7:27-22.16(g)1]
4. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of its operating permit. [N.J.A.C. 7:27-22.16(g)2]
5. This operating permit may be modified, terminated, or revoked for cause by the EPA pursuant to 40 CFR 70.7(g) and revoked or reopened and modified for cause by the Department pursuant to N.J.A.C. 7:27-22.25. [N.J.A.C. 7:27-22.16(g)3]

6. The permittee shall furnish to the Department, within a reasonable time, any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this operating permit; or to determine compliance with the operating permit. [N.J.A.C. 7:27-22.16(g)4]
7. The filing of an application for a modification of an operating permit, or of a notice of planned changes or anticipated non-compliance, does not stay any operating permit condition. [N.J.A.C. 7:27-22.16(g)5]
8. The operating permit does not convey any property rights of any sort, or any exclusive privilege. [N.J.A.C. 7:27-22.16(g)6]
9. Upon request, the permittee shall furnish to the Department copies of records required by the operating permit to be kept. [N.J.A.C. 7:27-22.16(g)7]
10.
  - a. For emergencies (as defined at 40 CFR 70.6(g)(1)) that result in non-compliance with any promulgated federal technology-based standard such as NSPS, NESHAPS, or MACT, a federal affirmative defense is available, pursuant to 40 CFR 70. To assert a federal affirmative defense, the permittee must use the procedures set forth in 40 CFR 70. The affirmative defense provisions described below may not be applied to any situation that caused the Facility to exceed any federally delegated regulation, including but not limited to NSPS, NESHAP, or MACT.
  - b. For situations other than those covered above, an affirmative defense is available for a violation of a provision or condition of the operating permit only if:
    - i. The violation occurred as a result of an equipment malfunction, an equipment startup or shutdown, or during the performance of necessary equipment maintenance; and
    - ii. The affirmative defense is asserted and established as required by N.J.S.A. 26:2C-19.1 through 19.5 and any implementing rules. [N.J.A.C. 7:27-22.16(l)]
11. In the event of a challenge to any part of this operating permit, all other parts of the permit shall continue to be valid. [N.J.A.C. 7:27-22.16(f)]
12. Each owner and each operator of any facility, source operation, or activity to which this permit applies is responsible for ensuring compliance with all requirements of N.J.A.C. 7:27-22. If the owner and operator are separate persons, or if there is more than one owner or operator, each owner and each operator is jointly and severally liable for any fees due under N.J.A.C. 7:27-22, and for any penalties for violation of N.J.A.C. 7:27-22. [N.J.A.C. 7:27-22.3]
13. The permittee shall ensure that no air contaminant is emitted from any significant source operation at a rate, calculated as the potential to emit, that exceeds the applicable threshold for reporting emissions set forth in the Appendix to N.J.A.C. 7:27-22 or 7:27-17.9(a), unless emission of the air contaminant is authorized by this operating permit. [N.J.A.C. 7:27-22.3(c)]
14. Consistent with the provisions of N.J.A.C. 7:27-22.3(e), the permittee shall ensure that all requirements of this operating permit are met. In the event that there are multiple emission limitations, monitoring, recordkeeping, and/or reporting requirements for a given source operation, the facility must comply with all requirements, including the most stringent.
15. Consistent with the provisions of N.J.A.C. 7:27-22.3(s), Except as otherwise provided in this subchapter, the submittal of any information or application by a permittee including, but not limited to, an application or notice for any change to the operating permit, including any administrative amendment, any minor or significant modification, renewal, a notice of a seven-day notice change, a notice of past or anticipated noncompliance, does not stay any operating permit condition, nor relieve a permittee from the obligation to obtain other necessary permits and to comply with all applicable Federal, State, and local requirements.

16. Applicable requirements derived from an existing or terminated consent decree with EPA will not be changed without advance consultation by the Department with EPA. N.J.A.C. 7:27-22.3(uu).
17. Unless specifically exempted from permitting, temporary mobile equipment for short-term activities may be periodically used at major facilities, on site for up to 90 days if the requirements listed below, (a) through (h) are satisfied.
  - a. The permittee will ensure that the temporary mobile equipment will not be installed permanently or used permanently on site.
  - b. The permittee will ensure that the temporary mobile equipment will not circumvent any State or Federal rules and regulations, even for a short period of time, and the subject equipment will comply with all applicable performance standards.
  - c. The permittee cannot use temporary mobile equipment unless the owner or operator of the subject equipment has obtained and maintains an approved Air Pollution Control Permit, issued pursuant to N.J.A.C. 7:27-8 or 22, prior to bringing the temporary mobile equipment to operate at the major facility.
  - d. The permittee is responsible for ensuring the temporary mobile equipment's compliance with the terms and conditions specified in its approved Air Pollution Control Permit when the temporary mobile equipment operates on the property of the permittee.
  - e. The permittee will ensure that temporary mobile equipment utilized for short-term activities will not operate on site for more than a total of 90 days during any calendar year.
  - f. The permittee will keep on site a list of temporary mobile equipment being used at the facility with the start date, end date, and record of the emissions from all such equipment (amount and type of each air contaminant) no later than 30 days after the temporary mobile equipment completed its job in accordance with N.J.A.C. 7:27-22.19(i)3.
  - g. Emissions from the temporary mobile equipment must be included in the emission netting analysis required of the permittee by N.J.A.C. 7:27-18.7. This information is maintained on site by the permittee and provided to the Department upon request in accordance with existing applicable requirements in the FC Section of its Title V permit.
  - h. Where short-term activities (employing temporary mobile equipment) will reoccur on at least an annual basis, the permittee is required to include such activities (and the associated equipment) within one year of the first use, in its Title V permit through the appropriate modification procedures.
18. Consistent with the provisions of N.J.A.C. 7:27-22.9(c), the permittee shall use monitoring of operating parameters, where required by the compliance plan, as a surrogate for direct emissions testing or monitoring, to demonstrate compliance with applicable requirements.
19. The permittee is responsible for submitting timely and administratively complete operating permit applications:
  - Administrative Amendments [N.J.A.C. 7:27-22.20(c)];
  - Seven-Day Notice changes [N.J.A.C. 7:27-22.22(e)];
  - Minor Modifications [N.J.A.C. 7:27-22.23(e)];
  - Significant Modifications [N.J.A.C. 7:27-22.24(e)]; and
  - Renewals [N.J.A.C. 7:27-22.30(b)].
20. The operating permit renewal application consists of a RADIUS application and the application attachment available at the Department's website <http://www.nj.gov/dep/aqpp/applying.html> (Attachment to the RADIUS Operating Permit Renewal Application). Both the RADIUS application and the Application Attachment, along with any other supporting documents must be submitted using the Department's Portal

at: <http://njdeponline.com/>. 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, the renewal application shall include all 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 any deficiencies can be identified and addressed to ensure that the application is administratively complete by the renewal deadline. Only renewal applications which are timely and administratively complete are eligible for an application shield.

21. For all source emissions testing performed at the facility, the phrase “worst case conditions without creating an unsafe condition” used in the enclosed compliance plan is consistent with EPA’s National Stack Testing Guidance, dated April 27, 2009, where all source emission testing performed at the facility shall be under the representative (normal) conditions that:
  - i. Represent the range of combined process and control measure conditions under which the facility expects to operate (regardless of the frequency of the conditions); and
  - ii. Are likely to most challenge the emissions control measures of the facility with regard to meeting the applicable emission standards, but without creating an unsafe condition.
22. Consistent with EPA’s National Stack Testing Guidance and Technical Manual 1004, a facility may not stop an ongoing stack test because it would have failed the test unless the facility also ceases operation of the equipment in question to correct the issue. Stopping an ongoing stack test in these instances will be considered credible evidence of emissions non-compliance.
23. Each permittee shall maintain records of all source emissions testing or monitoring performed at the facility and required by the operating permit in accordance with N.J.A.C. 7:27-22.19. Records shall be maintained, for at least five years from the date of each sample, measurement, or report. Each permittee shall maintain all other records required by this operating permit for a period of five years from the date each record is made. At a minimum, source emission testing or monitoring records shall contain the information specified at N.J.A.C. 7:27-22.19(b). [N.J.A.C. 7:27-22.19(a) and N.J.A.C. 7:27-22.19(b)]
24. A Permittee may seek the approval of the Department for a delay in testing required pursuant to this permit by submitting a written request to the appropriate Regional Enforcement Office in accordance with N.J.A.C. 7:27-22.18(k). A Permittee may also seek advanced approval for a longer period for submittal of a source emissions test report required by the permit by submitting a request to the Department’s Regional Enforcement Office in accordance with N.J.A.C. 7:27-22.19. [N.J.A.C. 7:27-22.18(k) and N.J.A.C. 7:27-22.19]

## Section C

**Facility Name: SHERMAN AVE ENERGY CENTER**

**Program Interest Number: 75476**

**Permit Activity Number: BOP180002**

### **STATE-ONLY APPLICABLE REQUIREMENTS**

N.J.A.C. 7:27-22.16(b)5 requires the Department to specifically designate as not being federally enforceable any permit conditions based only on applicable State requirements. The applicable State requirements to which this provision applies are listed in the table titled "State-Only Applicable Requirements."

### **STATE-ONLY APPLICABLE REQUIREMENTS**

The following applicable requirements are not federally enforceable:

<u>SECTION</u>	<u>SUBJECT ITEM</u>	<u>ITEM #</u>	<u>REF. #</u>
B	---	1	---
B	---	13b	---
D	FC	---	3
D	FC	---	9
D	GR10	---	ALL

**Section D**

**Facility Name: SHERMAN AVE ENERGY CENTER**  
**Program Interest Number: 75476**  
**Permit Activity Number: BOP180002**

**FACILITY SPECIFIC REQUIREMENTS AND INVENTORIES**

**FACILITY SPECIFIC REQUIREMENTS PAGE INDEX**

**Subject Item and Name** **Page Number**

**Facility (FC):**

FC 1

**Insignificant Sources (IS):**

<b>IS NJID</b>	<b>IS Description</b>	
IS5	Lube Oil Tank and Mist Eliminators (Tank < 2,000 gallons; Mist Eliminator < 50 lb/hr throughput)	6
IS7	(2) Ultra Low Sulfur Distillate Oil Storage Tanks (750,000 gal each) [NON APPLICABLE VOC >10,000 gal]	8

**Groups (GR):**

<b>GR NJID</b>	<b>GR Designation</b>	<b>GR Description</b>	
GR10	RGGI	RGGI Rule (For SC Turbine in U1)	11

**Emission Units (U):**

<b>U NJID</b>	<b>U Designation</b>	<b>U Description</b>	
U1	CT-1	Combustion Turbine	21
U2	CE-1	Gas Compressor Engine - Natural Gas Fired	120

**New Jersey Department of Environmental Protection  
Reason for Application**

**Permit Being Modified**

**Permit Class:** BOP      **Number:** 190001

**Description of Modifications:** Title V Renewal Changes:  
1) Reduce equivalent diameter of turbine emission stack (PT1) from 161 inches to 138 inches  
2) Remove NSPS Subpart Kb (IS7) as it does not apply  
3) Remove alternative compliance (calculation) for annual NOx emission limit (U1, OS Summary)  
4) Remove natural gas HEDD emission limits from ULSD operating scenarios (U1: OS1 and OS3); Turbine cannot comply with these limits while combusting ULSD so permit does not allow combustion of ULSD on high electric demand days unless natural gas is curtailed  
5) Remove ULSD sulfur content limits (0.3% & 0.05%) that no longer apply; The current limit (0.0015%) remains in the permit (U1: OS1 and OS3)  
6) Reduce SO2 emission limits for the turbine combusting ULSD to reflect the decrease in sulfur content of the fuel oil that is combusted [annual: 3.44 tpy replaces 159 tpy (OS Summary); hourly: 4.59 lb/hr replaces 212 lb/hr (OS1) and 5.4 lb/hr replaces 249.5 lb/hr (OS3)  
7) Add 10% opacity limit for ULSD combustion in turbine (U1: OS1 and OS3) which will apply once the aggregate sulfur content of the fuel stored in the fuel storage tanks drops to 15ppm  
8) Change stack test compliance period for TSP emission limit in U1, OS1 from "each of three tests" to "the average of three tests"  
9) Create new operating scenario for start-up (SU) and shut down (SD) associated with each of the current steady state operating scenarios; Ozone season combustion of ULSD (OS2), Non-ozone season combustion of ULSD (OS4), Ozone season combustion of NG (OS6) and Non-ozone season combustion of NG (OS8); Rename steady state operating scenarios: OS2 is now OS3, OS3 is now OS5 and OS4 is now OS7  
10) Modify definition of start-up by adding the language in brackets: Start-up commences with initiation of the combustion of fuel in the combustion turbine and concludes when the turbine reaches steady state operation at 80-100% of design capacity [, or when combustion is ceased prior to obtaining steady state operation (for instance, if start-up is abandoned due to equipment malfunction)]  
11) Include SU/SD specific emission limits in SU/SD operating scenarios. NOx = N.J.A.C.7:27-19 RACT limit, CO and VOC = N.J.A.C.7:27-16 RACT limits, SO2, TSP, PM-10 and PM-2.5 = steady state emission limits  
12) Exempt turbine from all stack testing if operated as a "peaking turbine" and is complying with the annual periodic emission monitoring requirement  
13) Require protocol submittal within 30 days and stack test performance within 1 year of triggering the need for a stack test, in the following situations:  
- If turbine exceeds "peaking unit" capacity during the last 30 months of the permit term  
- If turbine combusts fuel oil for more than 500 hrs/yr and is operated as a non-peaking unit  
- If first compressor engine operation, in this permit term, occurs within the last 30 months of the permit term  
14) Clarify that Formaldehyde emissions are included in the VOC emission limits (U1 & U2)  
15) Add annual and hourly PM-2.5 emission limits (U1 & U2) that are equal to PM-10 permit limits; Allow PM-10 stack testing to demonstrate compliance with PM-2.5 limits  
16) Revise list of permitted HAPs (U1 & U2) to include all HAPs that have a potential to emit that is above the 2018 reporting thresholds at N.J.A.C. 7:27-17 (previous lists were based on pre-2018 reporting thresholds)

**New Jersey Department of Environmental Protection**  
**Reason for Application**

17) Relax required periodic emission monitoring frequency of compressor engine, from quarterly to annually. This source has demonstrated compliance with 8 consecutive quarterly tests

18) Define "worst-case" permitted operating conditions, for compressor engine (U2) as "when the turbine is operating at worst-case permitted operating conditions, pursuant to U1 of this permit. However, the heat input to the compressor engine shall not exceed the permitted maximum heat input (U2, OS1)"

19) Include CH<sub>4</sub> and N<sub>2</sub>O emission limits in permit; Update calculation of GHG emissions to include current emission factors (increase GHG emissions)

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Subject Item: FC

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	General Provisions: The permittee shall comply with all applicable provisions of N.J.A.C. 7:27-1. [N.J.A.C. 7:27- 1]	None.	None.	None.
2	Control and Prohibition of Open Burning: The permittee is prohibited from open burning of rubbish, garbage, trade waste, buildings, structures, leaves, other plant life and salvage. Open burning of infested plant life or dangerous material may only be performed with a permit from the Department. [N.J.A.C. 7:27- 2]	None.	None.	Obtain an approved permit: Prior to occurrence of event (prior to open burning). [N.J.A.C. 7:27- 2]
3	Prohibition of Air Pollution: The permittee shall not emit into the outdoor atmosphere substances in quantities that result in air pollution as defined at N.J.A.C. 7:27-5.1. [N.J.A.C. 7:27- 5]	None.	None.	None.
4	Prevention and Control of Air Pollution Control Emergencies: Any person responsible for the operation of a source of air contamination set forth in Table 1 of N.J.A.C. 7:27-12 is required to prepare a written Standby Plan, consistent with good industrial practice and safe operating procedures, and be prepared for reducing the emission of air contaminants during periods of an air pollution alert, warning, or emergency. Any person who operates a source not set forth in Table 1 of N.J.A.C. 7:27-12 is not required to prepare such a plan unless requested by the Department in writing. [N.J.A.C. 7:27-12]	None.	None.	Comply with the requirement: Upon occurrence of event. Upon proclamation by the Governor of an air pollution alert, warning, or emergency, the permittee shall put the Standby Plan into effect. In addition, the permittee shall ensure that all of the applicable emission reduction objectives of N.J.A.C. 7:27-12.4, Table I, II, and III are complied with whenever there is an air pollution alert, warning, or emergency. [N.J.A.C. 7:27-12]
5	Emission Offset Rules: The permittee shall comply with all applicable provisions of Emission Offset Rules. [N.J.A.C. 7:27-18]	None.	None.	None.
6	Emission Statements: The permittee shall comply with all the applicable provisions of N.J.A.C. 7:27-21. [N.J.A.C. 7:27-21]	None.	None.	None.

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
7	Compliance Certification: The permittee shall submit an annual Compliance Certification for each applicable requirement, pursuant to N.J.A.C. 7:27-22.19(f). [N.J.A.C. 7:27-22]	None.	None.	Submit an Annual Compliance Certification: Annually to the Department and to EPA within 60 days after the end of each calendar year during which this permit was in effect. The Compliance Certification shall be certified pursuant to N.J.A.C. 7:27-1.39 by the responsible official and submitted electronically through the NJDEP online web portal. The certification should be printed for submission to EPA.  The NJDEP online web portal can be accessed at: <a href="http://www.state.nj.us/dep/online/">http://www.state.nj.us/dep/online/</a> . The Compliance Certification forms and instructions for submitting to EPA are available by selecting Documents and Forms and then Periodic Compliance Certification. [N.J.A.C. 7:27-22]
8	Prevention of Air Pollution from Consumer Products and Architectural Coatings: The permittee shall comply with all applicable provisions of N.J.A.C. 7:27-24 and [N.J.A.C. 7:27-23]	None.	None.	None.
9	Any operation of equipment which causes off-property effects, including odors, or which might reasonably result in citizen's complaints shall be reported to the Department to the extent required by the Air Pollution Control Act, N.J.S.A. 26:2C-19(e). [N.J.S.A. 26: 2C-19(e)]	Other: Observation of plant operations. [N.J.S.A. 26: 2C-19(e)].	Other: Maintain a copy of all information submitted to the Department. [N.J.S.A. 26: 2C-19(e)].	Notify by phone: Upon occurrence of event. A person who causes a release of air contaminants in a quantity or concentration which poses a potential threat to public health, welfare or the environment or which might reasonably result in citizen complaints shall immediately notify the Department. Such notification shall be made by calling the Environmental Action Hotline at (877) 927-6337. [N.J.S.A. 26: 2C-19(e)]
10	Prevention of Significant Deterioration: The permittee shall comply with all applicable provisions of Prevention of Significant Deterioration (PSD). [40 CFR 52.21]	None.	None.	None.

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
11	The permittee shall comply with all applicable provisions of National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Asbestos, Subpart M. [40 CFR 61]	Other: Comply with 40 CFR 61.145 and 61.150 when conducting any renovation or demolition activities at the facility. [40 CFR 61].	Other: Comply with 40 CFR 61.153 when conducting any renovation or demolition activities at the facility. [40 CFR 61].	Comply with the requirement: Upon occurrence of event. The permittee shall comply with 40 CFR 61.153 when conducting any renovation or demolition activities at the facility. [40 CFR 61]
12	Protection of Stratospheric Ozone:1) If the permittee manufactures, transforms, destroys, imports, or exports a Class I or Class II substance, the permittee is subject to all the requirements as specified at 40 CFR 82, Subpart A; 2) If the permittee performs a service on motor "fleet" vehicles when this service involves an ozone depleting substance refrigerant (or regulated substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified at 40 CFR 82, Subpart B. 3) The permittee shall comply with the standards for labeling of products containing or manufactured with ozone depleting substances pursuant to 40 CFR 82, Subpart E. 4). The permittee shall comply with the standards for recycling and emission reductions of Class I and Class II refrigerants or a regulated substitute substance during the service, maintenance, repair, and disposal of appliances pursuant to 40 CFR 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B. 5) The permittee shall be allowed to switch from any ozone depleting substance to any alternative that is listed in the Significant New Alternative Program (SNAP) promulgated pursuant to 40 CFR 82, Subpart G. [40 CFR 82]	Other: Comply with 40 CFR 82 Subparts A, B, E, F, and G. [40 CFR 82].	Other: Comply with 40 CFR 82 Subparts A, B, E, F, and G. [40 CFR 82].	Comply with the requirement: Upon occurrence of event. The permittee shall comply with 40 CFR 82 Subparts A, B, E, F, and G. [40 CFR 82]

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
13	<p>Deviation Reports: The permittee shall submit to the Department a certified six-month Deviation Report relating to testing and monitoring required by the operating permit.</p> <p>[N.J.A.C. 7:27-22.19(d)3], [N.J.A.C.7:27-22.19(e)], and [N.J.A.C. 7:27-22.19(c)]</p>	None.	<p>Other: The permittee shall maintain deviation reports for a period of five years from the date each report is submitted to the Department. [N.J.A.C.7:27-22.19(a)] and [N.J.A.C. 7:27-22.19(e)].</p>	<p>Submit a report: As per the approved schedule. The six-month deviation reports for the period from January 1 through June 30 shall be submitted by July 30 of the same calendar year, and for the period from July 1 through December 31, shall be submitted by January 30 of the following calendar year.</p> <p>The annual compliance certification required by N.J.A.C.7:27-22.19(f) may also be considered as your six-month Deviation Report for the period from July 1 – December 31, if submitted by January 30 of the following calendar year.</p> <p>The reports shall be certified pursuant to N.J.A.C. 7:27-1.39 by the responsible official and submitted electronically through the NJDEP online web portal.</p> <p>The NJDEP online web portal can be accessed at: <a href="http://www.state.nj.us/dep/online/">http://www.state.nj.us/dep/online/</a> . The Compliance Certification forms are available by selecting Documents and Forms and then Periodic Compliance Certification. [N.J.A.C. 7:27-22]</p>
14	<p>Used Oil Combustion: No person shall combust used oil except as authorized pursuant to N.J.A.C. 7:27-20. [N.J.A.C. 7:27-20.2]</p>	None.	None.	<p>Comply with the requirement: Prior to occurrence of event (prior to burning used oil) either register with the Department pursuant to N.J.A.C. 7:27-20.3 or obtain a permit issued by the Department pursuant to N.J.A.C. 7:27-8 or 7:27-22, whichever is applicable. [N.J.A.C. 7:27-20.2(d)]</p>
15	<p>Prevention of Accidental Releases: Facilities producing, processing, handling or storing a chemical, listed in the tables of 40 CFR Part 68.130, and present in a process in a quantity greater than the listed Threshold Quantity, shall comply with all applicable provisions of 40 CFR 68. [40 CFR 68]</p>	<p>Other: Comply with 40 CFR 68. [40 CFR 68].</p>	<p>Other: Comply with 40 CFR 68. [40 CFR 68].</p>	<p>Other (provide description): Other. Comply with 40 CFR 68 as described in the Applicable Requirement. [40 CFR 68]</p>

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
16	The Department and its authorized representatives shall have the right to enter and inspect any activity subject to N.J.A.C. 7:27-22, or portion thereof, pursuant to N.J.A.C. 7:27-1.31. [N.J.A.C. 7:27-22.16(g)9]	None.	None.	None.
17	The permittee shall pay fees to the Department pursuant to N.J.A.C. 7:27. [N.J.A.C. 7:27-22.16(g)10]	None.	None.	None.
18	Each permittee shall meet all requirements of the approved source emissions testing and monitoring protocol during the term of the operating permit.  Whenever the permittee makes a replacement, modification, change or repair of a certified CEMS or COMS that may significantly affect the ability of the system to accurately measure or record data, the permittee must recertify the CEMS or COMS in accordance with Section V.B. and Appendix E of Technical Manual 1005.  The permittee is responsible for any downtime associated with the replacement, modification, change or repair of the CEMS or COMS. [N.J.A.C. 7:27-22.18(j)]	None.	None.	Comply with the requirement: Upon occurrence of event. The permittee is responsible for contacting the Emission Measurement Section to determine the need for recertification and/or to initiate the recertification process. [N.J.A.C. 7:27-22.18(j)]
19	Each process monitor must be operated at all times when the associated process equipment is operating except during service outage time not to exceed 24 hours per calendar quarter. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. The permittee must keep a service log to document any outage. [N.J.A.C. 7:27-22.16(o)]	None.
20	Continuous recording for process monitors must be at a sufficient frequency and resolution to be able to document compliance or non-compliance in accordance with Technical Manual 1005 for CEMS (TM1005(B)(3)). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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 Facility Specific Requirements

Subject Item: IS5 Lube Oil Tank and Mist Eliminators (Tank < 2,000 gallons; Mist Eliminator < 50 lb/hr throughput)

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	<p>The lube oil storage tank shall have a maximum capacity of less than 2,000 gallons.</p> <p>Pursuant to paragraph 1 of the definition of "insignificant source operation" and paragraph 8 and 9 of the definition of "significant source operation", stationary storage tanks which have a capacity of less than 2,000 gallons are insignificant source operations. [N.J.A.C. 7:27-22.1]</p>	None.	None.	None.
2	<p>The combined weight of all the raw materials used by the lube oil mist eliminators shall not exceed 50 pounds in any one hour of operation.</p> <p>Pursuant to paragraph 1 of the definition of "insignificant source operation" and paragraph 6 of the definition of "significant source operation", a source is an insignificant source operation unless the combined weight of all the raw materials used exceeds 50 pounds in any one hour of operation. The weight of the following shall be excluded when determining the combined weight of the raw materials used:</p> <ul style="list-style-type: none"> <li>* Air;</li> <li>* Water;</li> <li>* Containers, provided that the container is not consumed as part of the operation of the equipment; and</li> <li>* Paper, metal, or plastic that is twisted, bent, or folded, in the equipment, provided that the twisting, bending, or folding does not cause visible emissions or air pollution.</li> </ul> <p>[N.J.A.C. 7:27-22.1]</p>	None.	None.	None.
3	TSP <= 0.5 lb/hr. [N.J.A.C. 7:27- 6.2(a)]	None.	None.	None.

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Facility Specific Requirements**

<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
4	Opacity may be no greater than 20% exclusive of visible condensed water, except for a period of not longer than 3 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.
5	No Visible Emissions, exclusive of condensed water vapor, except for no more than 3 minutes in any consecutive 30-minute period. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

**Subject Item:** IS7 (2) Ultra Low Sulfur Distillate Oil Storage Tanks (750,000 gal each) [NON APPLICABLE VOC >10,000 gal]

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	The operating temperature of the tank shall not be greater than 350 degrees F. [N.J.A.C. 7:27-22.1]	None.	None.	None.
2	The vapor pressure of the liquid, excluding the vapor pressure of water, shall be less than 0.02 psia at the liquid's actual temperature or at 70 degrees F, whichever is higher. [N.J.A.C. 7:27-22.1]	None.	None.	None.
3	The tank or vessel shall have no visible emissions, exclusive of water vapor, to the outdoor atmosphere. [N.J.A.C. 7:27-22.1]	None.	None.	None.
4	The tank or vessel shall not emit any air contaminants which may cause an odor detectable outside the property boundaries of the facility. [N.J.A.C. 7:27-22.1]	None.	None.	None.
5	The tank or vessel shall not be subject to any NESHAPS, MACT, or NSPS air pollution control standards. [N.J.A.C. 7:27-22.1]	None.	None.	None.
6	The tank's or vessel's potential to emit each TXS and each HAP shall not exceed the reporting thresholds at N.J.A.C. 7:27-17.9(a). [N.J.A.C. 7:27-22.1]	None.	None.	None.
7	The percentage by weight of all HAPs collectively in the raw material stored in the tank, or mixed or blended in the vessel, shall be less than 1.0 percent. [N.J.A.C. 7:27-22.1]	None.	None.	None.

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
8	The owner or operator shall have readily available upon Department request a statement certified in accordance with N.J.A.C. 7:27-1.39, signed by the responsible official, as defined at N.J.A.C. 7:27-1.4, that: (1) specifies the contents of the tank; (2) affirms that the tank or vessel meets the above applicable requirements and (3) attests that the tank or vessel is in compliance with all other applicable State or federal air pollution requirements. [N.J.A.C. 7:27-22.1]	None.	None.	None.
9	Tank content limited to No. 2 and lighter 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 / certificate of analysis once per bulk fuel shipment. [N.J.A.C. 7:27-22.16(e)]	None.
10	Sulfur Content in Fuel <= 15 ppmw (0.0015 % by weight). Maximum allowable sulfur content in No. 2 and lighter fuel oil. [N.J.A.C. 7:27- 9.2(a)]	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 / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(o)]	None.
11	Fuel stored in New Jersey that met the applicable maximum sulfur content standard of Tables 1A or 1B of N.J.A.C. 7:27-9.2 at the time it was initially stored in New Jersey may be used in New Jersey after the operative date of the applicable standard in 1B. [N.J.A.C. 7:27- 9.2(a)]	None.	None.	None.
12	Throughput <= 11,467,000 gallons per year. Annual throughput limit, applies to each fuel tank, separately. [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 / certificate of analysis once per bulk fuel shipment. [N.J.A.C. 7:27-22.16(e)]	None.
13	VOC (Total) <= 0.21 tons/yr. This limit includes formaldehyde emissions. Annual emission limit for both storage tanks combined, from TANKS 4.0.9d program. Based on 11,467,000 gallon/year throughput for each storage tank. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
14	<p><b>Fuel Tank Sulfur Content Sampling:</b></p> <p>Since the Permittee will continue to combust any higher sulfur distillate fuel oil that remains in the fuel storage tank after switching to a lower sulfur distillate fuel and this remaining fuel may mix with the lower sulfur fuel, creating a fuel mixture with an aggregate sulfur content higher than that of the lower sulfur fuel, the permittee shall conduct composite sampling of the storage tank after receipt of every fuel lot delivered to the facility. A fuel lot is defined as a shipment or delivery (ship, barge, a group of trucks, discrete purchase of diesel fuel through a pipeline). Sampling shall begin on July 1, 2014 and continue until the aggregate sulfur content of the fuel in the fuel tanks (IS7) is 0.0015% or less. NOTE: the two tanks (IS7) are connected such that movement of fuel is equalized between the two tanks and the sulfur content will remain the same in both tanks.</p> <p>Once the above sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the tanks has dropped to 0.0015%, all applicable SO2 emission limits for the combustion turbine shall be based on 0.0015% sulfur fuel oil instead of 0.0044% sulfur fuel oil.</p> <p>(See SO2 emission limits in U1: OS Summary, OS1, OS2 and OS3</p> <p>[40 CFR 75, Appendix D, Section 2.2] and [N.J.A.C. 7:27-22.16(a)]</p>	<p>Other: Sulfur content in fuel monitored by a sample taken from each oil tank after each additional fuel lot is delivered. Sample according to the single tank composite sampling procedure or all levels sampling procedure in ASTM D4057-95, Standard Practice for Manual Sampling of Petroleum and Petroleum Products.</p> <p>Sampling shall begin on July 1, 2014 and continue until the aggregate sulfur content of the fuel in both fuel tanks (IS7) is 0.0015% or less.</p> <p>Once the applicable requirement of this condition is satisfied, fuel oil sampling shall be in accordance with 40 CFR 75, Appendix D, Section 2.2, for purposes of demonstrating compliance with the applicable CSAPR rules for reporting SO2 and NOx mass emissions.</p> <p>[40 CFR 75, Appendix D, Section 2.2] and [N.J.A.C. 7:27-22.16(o)].</p>	<p>Recordkeeping by certified lab analysis results per delivery. [N.J.A.C. 7:27-22.16(o)]</p>	<p>None.</p>

IS7 (2) Ultra Low Sulfur Distillate Oil Storage Tanks (750,000 gal each) [N...

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 Facility Specific Requirements

Subject Item: GR10 RGGI Rule (For SC Turbine in U1)

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	<p>The owners and operators of each CO2 budget source and each CO2 budget unit at the source shall, as of the CO2 allowance transfer deadline, hold CO2 allowances in the sources's compliance account, available for compliance deductions under N.J.A.C. 7:27C-6.9, as follows:</p> <p>1) In the case of an initial control period, the number of CO2 allowances held shall be no less than the amount equivalent to the total CO2 emissions for the initial control period from all CO2 budget units at the source;</p> <p>2) In the case of a control period, the number of CO2 allowances held shall be no less than the total CO2 emissions for the control period from all CO2 budget units at the source, less the CO2 allowances deducted to meet the requirements of N.J.A.C 7:27C-1.4(g) with respect to the previous two interim control periods, as determined in accordance with N.J.A.C 7:27C-6 and 7:27C-8;</p> <p>3) In the case of an interim control period, the number of CO2 allowances held shall be no less than the total CO2 emissions for the interim control period from all CO2 budget units at the source, multiplied by 0.50, as determined in accordance with NJAC 7:27C-6 and 7:27C-8. [N.J.A.C. 7:27C-1.4(f)]</p>	<p>Monitored by calculations at the approved frequency. The Department shall use the emission measurements recorded and reported in accordance with N.J.A.C. 7:27C-8 to determine the unit's compliance. Total tons for a control period shall be calculated as the sum of all recorded hourly emissions (or the tonnage equivalent of the recorded hourly emissions rates) in accordance with N.J.A.C. 7:27C-8. The Department will round total CO2 emissions to the nearest whole ton, so that any fraction of a ton equal to or greater than 0.50 tons is deemed to equal one ton and any fraction of a ton less than 0.50 tons is deemed to equal zero tons. [N.J.A.C. 7:27C- 1.4(d)]</p>	<p>Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. Maintain records of all CO2 emissions from each CO2 budget unit. [N.J.A.C. 7:27C- 8]</p>	<p>Submit a report: 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). The CO2 authorized account representative shall submit quarterly reports to the Bureau of Energy and Sustainability, for each calendar quarter beginning with:</p> <p>i. For a unit that commences commercial operation before December 17, 2018, the calendar quarter beginning January 1, 2020; or</p> <p>ii. For a unit commencing commercial operation on or after December 17, 2018, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under N.J.A.C. 7:27C-8.1(d). If the calendar quarter so determined is the third or fourth quarter of 2019, reporting shall commence in the quarter beginning January 1, 2020.</p> <p>Quarterly reports shall be submitted in the manner specified in Subpart H of 40 CFR 75 and 40 CFR 75.64. Quarterly reports shall be submitted for each CO2 budget unit (or group of units using a common stack), and shall include all of the data and information required in Subpart G of 40 CFR 75, except for opacity, heat input, NOx and SO2 provisions.</p> <p>The CO2 authorized account representative shall submit, to the Bureau of Energy and Sustainability, a compliance certification in support of each quarterly report, pursuant to N.J.A.C. 7:27C-8.5(c)3. [N.J.A.C. 7:27C-8.5(c)]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
2	<p>CO2 Allowance Tracking System (COATS): CO2 allowances shall be held in, deducted from, or transferred among COATS accounts in accordance with N.J.A.C 7:27C-5, 6, and 7. [N.J.A.C 7:27C-1.4(i)] A CO2 allowance shall not be deducted, in order to comply with N.J.A.C. 7:27-1.4(f), for a control period that ends prior to the year for which the CO2 allowance was allocated. [N.J.A.C 7:27C-1.4(j)] A CO2 offset allowance shall not be deducted, in order to comply with N.J.A.C. 7:27-1.4(f), beyond the applicable percent limitations at N.J.A.C. 7:27C6.9(a)3. [N.J.A.C. 7:27C- 1.4(k)]</p>	<p>Other: The Permittee shall review any transactions recorded in its COATS account for accuracy.[N.J.A.C. 7:27-22.16(o)].</p>	<p>None.</p>	<p>Submit a report: As per the approved schedule Submit compliance certification reports pursuant to N.J.A.C 7:27C-4.1(a) and CO2 allowance transfer requests, as necessary, pursuant to N.J.A.C 7:27C-7.1(a), to the Bureau of Energy and Sustainability</p> <p>If information in COATS account is found to be inaccurate, notify the Bureau of Energy and Sustainability. [N.J.A.C. 7:27-22.16(o)]</p>
3	<p>CO2: The owners and operators of a CO2 budget source that has excess emissions in any control period or in the initial control period, or has excess interim emissions in any interim control period, shall:</p> <ol style="list-style-type: none"> <li>1. Forfeit the CO2 allowances required for deduction under N.J.A.C. 7:27C-6.9(e);</li> <li>2. Not use any CO2 offset allowances to cover any part of such excess emissions; and</li> <li>3. Pay any fine, penalty, or assessment or comply with any other remedy imposed under N.J.A.C. 7:27C-6.9(f). [N.J.A.C. 7:27C- 1.4(n)]</li> </ol>	<p>Other: The Permittee shall review any transactions recorded in its COATS account for accuracy.[N.J.A.C. 7:27-22.16(o)].</p>	<p>None.</p>	<p>Submit notification: Upon occurrence of event. If information in COATS account is found to be inaccurate, notify the Bureau of Energy and Sustainability. [N.J.A.C. 7:27-22.16(o)]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
4	CO2: Account certificate of representation and supporting documents. [N.J.A.C. 7:27C-1.4(o)1]	None.	CO2: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. The owners and operators of the CO2 budget source and each CO2 budget unit at the source shall keep on site at the source the account certificate of representation for the CO2 authorized account representative for the CO2 budget source and each CO2 budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with N.J.A.C. 7:27C-2.4. These documents shall be retained on site at the source until such documents are superseded by a newly submitted account certificate of representation changing the CO2 authorized account representative. [N.J.A.C. 7:27C- 1.4(o)1]	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
5	CO2: Copies of Documents & Reports [N.J.A.C. 7:27C- 1.4(o)]	None.	<p>CO2: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event The owners and operators of the CO2 budget source and each CO2 budget unit at the source shall keep on site at the source each of the following documents for a period of 10 years from the date the document is created. The Department may at any time prior to the end of the 10-year period extend the 10-year period in writing, if it determines that retention of the documents beyond the 10-year period is necessary to determine compliance with the requirements of N.J.A.C. 7:27C:</p> <ul style="list-style-type: none"> <li>- All emissions monitoring information, in accordance with N.J.A.C. 7:27C-8 and 40 CFR 75.57;</li> <li>- Copies of all reports, compliance certifications, and other submissions, and all records made or required under the CO2 Budget Trading Program; and</li> <li>- Copies of all documents used to complete an application for a new or modified operating permit that incorporates the requirements of the CO2 Budget Trading Program and any other submission under the CO2 Budget Trading Program or to demonstrate compliance with the requirements of the CO2 Budget Trading Program.</li> </ul> <p>[N.J.A.C 7:27C-1.4(o)2, [N.J.A.C 7:27C-1.4(o)3 and. [N.J.A.C. 7:27C-1.4(o)4]</p>	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
6	CO2: Compliance Certification Report: [N.J.A.C. 7:27C-1.4(p)] and [N.J.A.C. 7:27C- 4.1]	None.	None.	<p>Submit a report: As per the approved schedule. For each control period, including the initial control period, in which a CO2 budget source is subject to the CO2 requirements of N.J.A.C 7:27C-1.4, the CO2 authorized account representative shall submit, to the Bureau of Energy and Sustainability, by March 1 following each relevant three-calendar-year control period, the compliance certification report that includes the following elements listed in N.J.A.C. 7:27C-4.1(b):</p> <ol style="list-style-type: none"> <li>1. Identification of the CO2 budget source and each CO2 budget unit at the source;</li> <li>2. At the CO2 authorized account representative's option, the serial numbers of the CO2 allowances that are to be deducted from the CO2 budget source's compliance account under N.J.A.C. 7:27C-6.9 for the control period, including the serial numbers of any CO2 offset allowances that are to be deducted subject to the limitations of N.J.A.C. 7:27C-6.9(a)3; and</li> <li>3. The compliance certification:</li> </ol> <p>In the compliance certification report, the CO2 authorized account representative shall certify whether the CO2 budget source and each CO2 budget unit at the source for which the compliance certification is submitted was operated, during the calendar years covered by the report, in compliance with the requirements of the CO2 Budget Trading Program, based on reasonable inquiry of those persons with primary responsibility for operating the CO2 budget source and the CO2 budget units at the source in compliance with the CO2 Budget Trading Program. [N.J.A.C. 7:27C-4.1(b)] and. [N.J.A.C. 7:27C- 4.1]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
7	<p>CO2: The owner or operator of each CO2 budget unit shall install all monitoring systems necessary to monitor CO2 mass emissions in accordance with 40 CFR Part 75, except for equation G-1 of Appendix G, which shall not be used to determine CO2 emissions. Compliance with this paragraph may require systems to monitor CO2 concentration, stack gas flow rate, O2 concentration, heat input, and fuel flow rate [N.J.A.C. 7:27C- 8.1(c)1]</p>	<p>Other: The owner or operator of a CO2 budget unit shall meet the monitoring system certification and other requirements of N.J.A.C. 7:27C-8.1(c) and shall quality-assure the data from the monitoring systems in accordance with the schedule prescribed in N.J.A.C. 7:27C-8.1(d)(1) for a CO2 budget unit that commenced commercial operation before December 17, 2018, N.J.A.C. 7:27C-8.1(d)(2) for a CO2 budget unit that commenced commercial operation on or after December 17, 2018 or N.J.A.C. 7:27C-8.1(d)(3) for a CO2 budget unit for which construction of a new stack or flue installation is completed after the applicable deadlines at N.J.A.C. 7:27C-8.1(d)(1) and (2). [N.J.A.C. 7:27C-8.1(c)2], [N.J.A.C. 7:27C-8.1(c)3] and [N.J.A.C. 7:27C-8.1(d)]</p> <p>The owner or operator shall ensure, for each continuous emissions monitoring system (including the automated data acquisition and handling system) the successful completion of all of the initial certification testing required under 40 CFR 75.20 by the applicable deadlines listed above. In addition, whenever the owner or operator installs a monitoring system in order to meet the requirements of N.J.A.C. 7:27C-8 in a location where no such monitoring system was previously installed, initial certification in accordance with 40 CFR 75.20 is required.[N.J.A.C. 7:27C- 8.2(d)].</p>	<p>CO2: Recordkeeping by manual logging of parameter or storing data in a computer data system at the approved frequency. The owner or operator of a CO2 budget unit shall record the data from the monitoring systems in accordance with the schedule prescribed in N.J.A.C. 7:27C-8.1(d)(1) for a CO2 budget unit that commenced commercial operation before December 17, 2018, N.J.A.C. 7:27C-8.1(d)(2) for a CO2 budget unit that commenced commercial operation on or after December 17, 2018 or N.J.A.C. 7:27C-8.1(d)(3) for a CO2 budget unit for which construction of a new stack or flue installation is completed after the applicable deadlines at N.J.A.C. 7:27C-8.1(d)(1) and (2). [N.J.A.C. 7:27C-8.1(c)3] and. [N.J.A.C. 7:27C-8.1(d)]</p>	<p>Submit a report: As per the approved schedule. The owner or operator of a CO2 budget unit shall report the data from the monitoring systems in accordance with the schedule prescribed in N.J.A.C. 7:27C-8.1(d)(1) for a CO2 budget unit that commenced commercial operation before December 17, 2018, N.J.A.C. 7:27C-8.1(d)(2) for a CO2 budget unit that commenced commercial operation on or after December 17, 2018 or N.J.A.C. 7:27C-8.1(d)(3) for a CO2 budget unit for which construction of a new stack or flue installation is completed after the applicable deadlines at N.J.A.C. 7:27C-8.1(d)(1) and (2). [N.J.A.C. 7:27C-8.1(c)3] and. [N.J.A.C. 7:27C- 8.1(d)]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
8	<p>CO2: The owner or operator of a CO2 budget unit that commenced commercial operation before December 17, 2018 and did not certify all monitoring systems required under N.J.A.C. 7:27C8.1(c) by June 11, 2019; or a CO2 budget unit that commenced commercial operation on or after December 17, 2018 and did not certify all monitoring systems required under N.J.A.C. 7:27C8.1(c) by June 11, 2019 or the earlier of 90 unit operating days or 180 calendar days after the date on which the unit commenced commercial operation; or a CO2 budget unit for which construction of a new stack or flue installation is completed after the above deadline and did not certify all monitoring systems required under N.J.A.C. 7:27C8.1(c) by the earlier of 90 unit operating days or 180 calendar days after the date on which emissions first exited the new stack or flue and entered the atmosphere; shall, for each such monitoring system, determine, record and report, the necessary data as specified. [N.J.A.C. 7:27C- 8.1(e)]</p>	<p>Other: The owner or operator shall, for each monitoring system, determine maximum (or, as appropriate, minimum) potential values for CO2 concentration, CO2 emissions rate, stack gas moisture content, fuel flow rate, heat input, and any other parameter required to determine CO2 mass emissions in accordance with 40 CFR 75.31(b)(2) or (c)(3) and section 2.4 of Appendix D of 40 CFR Part 75, as applicable.[N.J.A.C. 7:27C- 8.1(e)].</p>	<p>CO2: Recordkeeping by manual logging of parameter or storing data in a computer data system at the approved frequency. The owner or operator shall, for each monitoring system, record maximum (or, as appropriate, minimum) potential values for CO2 concentration, CO2 emissions rate, stack gas moisture content, fuel flow rate, heat input, and any other parameter required to determine CO2 mass emissions in accordance with 40 CFR 75.31(b)(2) or (c)(3) and section 2.4 of Appendix D of 40 CFR Part 75, as applicable. [N.J.A.C. 7:27C- 8.1(e)]</p>	<p>Submit a report: As per the approved schedule. The owner or operator shall, for each monitoring system, report maximum (or, as appropriate, minimum) potential values for CO2 concentration, CO2 emissions rate, stack gas moisture content, fuel flow rate, heat input, and any other parameter required to determine CO2 mass emissions in accordance with 40 CFR 75.31(b)(2) or (c)(3) and section 2.4 of Appendix D of 40 CFR Part 75, as applicable. [N.J.A.C. 7:27C-8.1(e)]</p>
9	<p>No owner or operator of a CO2 budget unit shall use any alternative monitoring system, alternative reference method, or any other alternative for the required continuous emissions monitoring system without having obtained prior written approval in accordance with N.J.A.C. 7:27C-8.6. [N.J.A.C. 7:27C-8.1(j)1]</p>	<p>None.</p>	<p>None.</p>	<p>Obtain approval: Upon occurrence of event. The CO2 authorized account representative of a CO2 budget unit may submit a petition to the Administrator under 40 CFR 75.66, and to the Department requesting approval to apply an alternative to any requirement of 40 CFR Part 75 or to a requirement concerning any additional CEMS required under the common stack provisions of 40 CFR 75.72 or a CO2 concentration CEMS used under 40 CFR 75.71(a)(2). [N.J.A.C. 7:27C-8.6]</p>

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10	<p>CO2: The owner or operator of a CO2 budget unit shall comply with the initial certification and recertification procedures set forth at N.J.A.C. 7:27C-8.2(d) through (r) for a continuous emissions monitoring system and an excepted monitoring system under Appendix D of 40 CFR Part 75, except as provided in N.J.A.C. 7:27C-8.2(a). The owner or operator of a CO2 budget unit that qualifies to use the low mass emissions excepted monitoring methodology in 40 CFR 75.19 or that qualifies to use an alternative monitoring system under Subpart E of 40 CFR Part 75 shall comply with the initial certification and recertification procedures set forth at N.J.A.C. 7:27C-8.2(q) or (r), respectively. [N.J.A.C. 7:27C- 8.2(c)]</p>	None.	None.	<p>Submit notification: Upon occurrence of event. The CO2 authorized account representative shall submit to the Department, EPA Region 2 office and the Administrator a written notice of the dates of certification in accordance with N.J.A.C. 7:27C-8.4. [N.J.A.C. 7:27C-8.2(h)]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
11	<p>CO2: . The owner or operator shall recertify a monitoring system in accordance in 40 CFR 75.20(b) whenever the owner or operator makes the replacement, modification, or changes described in N.J.A.C. 7:27C-8.2(f). [N.J.A.C. 7:27C-8.2(f)]</p> <p>A provisionally certified monitor may be used under the CO2 Budget Trading Program for a period not to exceed 120 days after the Department receives the complete certification application for the monitoring system, or component thereof, under N.J.A.C.7:27C-8.2(h). [N.J.A.C. 7:27C-8.2(j)]</p> <p>Whenever any monitoring system fails to meet the quality assurance and quality control requirements or data validation requirements of 40 CFR Part 75, data shall be substituted using the applicable procedures in Subpart D or Appendix C, of 40 CFR Part 75. [N.J.A.C. 7:27C- 8.3(a)]</p>	<p>Other: The owner or operator of a CO2 budget unit shall submit a monitoring plan in the manner prescribed in 40 CFR 75.62, either electronically or hardcopy. If electronic, no later than 21 days prior to the initial certification tests; at the time of each certification or recertification application submission; and (prior to or concurrent with) the submittal of the electronic quarterly report for a reporting quarter where an update of the electronic monitoring plan information is required. If hardcopy, no later than 21 days prior to the initial certification test; with any certification or recertification application, if a hardcopy monitoring plan change is associated with the certification or recertification event; and within 30 days of any other event with which a hardcopy monitoring plan change is associated, pursuant to 40 CFR 75.53(b). Electronic submittal of all monitoring plan information, including hardcopy portions, is permissible provided that a paper copy of the hardcopy portions can be furnished upon request.[N.J.A.C. 7:27C- 8.5(b)].</p>	None.	<p>Submit documentation of compliance: As per the approved schedule. The CO2 authorized account representative shall submit a certification or recertification application to the Department for each monitoring system within 45 days after completing all CO2 monitoring system initial certification or recertification tests required under N.J.A.C. 7:27C-8.2 including the information required under 40 CFR 75.53(g) and (h) and 75.63. . [N.J.A.C. 7:27C- 8.2(e)]</p>
12	<p>The CO2 authorized account representative of a CO2 budget unit that co-fires eligible biomass as a compliance mechanism under N.J.A.C. 7:27C shall report the information as provided in N.J.A.C. 7:27C-8.7 to the Department for each calendar quarter. [N.J.A.C. 7:27C- 8.7(a)]</p>	None.	None.	<p>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). [N.J.A.C. 7:27C-8.7]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
13	Net electric output and net thermal output. [N.J.A.C. 7:27C- 8.8(a)]	Other: The output monitoring plan shall include: - a diagram of the electrical and/or steam system, - a description of each output monitoring system, - a detailed description of all quality assurance and quality control activities, and - documentation supporting any output value(s) to be used as a missing data value should there be periods of invalid output data. [N.J.A.C. 7:27C-8.8(g)] Ongoing quality assurance and quality control (QA/QC) activities shall be performed in order to maintain the output system in accordance with N.J.A.C. 7:27C-8.8(i).[N.J.A.C. 7:27C- 8.8].	Other: The owner or operator of a CO2 budget source shall retain data used to monitor, determine, or calculate net electrical output and net thermal output for 10 years.[N.J.A.C. 7:27C-8.8(j)].	Submit a report: Annually. The CO2 authorized account representative shall submit annual output reports electronically to the Department, pursuant to N.J.A.C. 7:27C-8.8(b) through (j), by the March 1 following the immediately preceding calendar year. These reports shall also be submitted, upon Department request, in hardcopy. The annual output report shall include unit level megawatt-hours and all useful steam output; and shall include a certification from the CO2 authorized account representative pursuant to N.J.A.C. 7:27C-8.8(k). [N.J.A.C. 7:27C-8.8(a)] and. [N.J.A.C. 7:27C- 8.8(k)]

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**Emission Unit:** U1 Combustion Turbine  
**Subject Item:** CD2 Water Injection for Turbine

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	<p>The permittee shall operate and maintain the Water Injection System in accordance with the manufacturer's requirements, during all periods of turbine operation, except during periods of start-up, shut down, maintenance and calibration as defined in this permit. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Monitored by hour/time monitor continuously.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. The permittee shall continuously record the time and duration of the operation of both the gas turbine and the water injection system.</p> <p>The permittee shall maintain the Water Injection System manufacturer's specifications, and operation and maintenance manual on-site. [N.J.A.C. 7:27-22.16(o)]</p>	None.
2	<p>Water-to-Fuel Ratio: The water-to-fuel ratio shall be within the manufacturer's recommended range, in pounds of water per pound of fuel. This ratio is only required when the continuous emission monitoring system is not operating. The limit shall not apply during the time valid data is collected by the CEM. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Water-to-Fuel Ratio: Monitored by water-to-fuel monitoring device continuously.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>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)]</p>	<p>Water-to-Fuel Ratio: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-22.16(o)]</p>	None.

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**Emission Unit:** U1 Combustion Turbine

**Operating Scenario:** OS Summary

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Summary of Applicable Federal Regulations: 40 CFR 60 Subpart A 40 CFR 60 Subpart GG 40 CFR 97 - CSAPR 40 CFR 72 - Phase II Acid Rain [None]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
2	<p><b>RENEWAL STACK TEST SUMMARY:</b> (NOx, CO, VOC, TSP, PM-10 and PM-2.5)</p> <p>The permittee shall conduct a stack test at least 18 months prior to the expiration of the initial or renewed operating permit using an approved protocol to demonstrate compliance with emission limits for NOx, CO, PM-10 and PM-2.5 as specified in the compliance plan for OS5 and for NOx, CO, VOC, TSP, PM-10 and PM-2.5 as specified in the compliance plan for OS Summary and OS1. PM-10 stack testing can be used to demonstrate compliance with PM-2.5 emission limits. The permittee shall provide EMS with the turbine load performance curve with the protocol.</p> <p>Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition.</p> <p>If combustion of ULSD exceeds 500 hours in any 365 day period and the turbine is not complying with "Periodic Emission Monitoring Alternative for Peaking Units" in OS Summary, the permittee shall:</p> <ol style="list-style-type: none"> <li>1) Within 30 days of the exceedence, submit a stack test protocol to EMS; and</li> <li>2) Within 1 year of the exceedence, conduct above stack test for TSP, PM-10 and PM-2.5, while combusting ULSD.</li> </ol> <p>See Alternative Monitoring Options in OS Summary:</p> <ol style="list-style-type: none"> <li>1) "Periodic Emission Monitoring Alternative for Peaking Units"</li> <li>2) "CEMS Alternative to Renewal Stack Test for NOx and CO" [N.J.A.C. 7:27-22.16(a)]</li> </ol>	<p>Other: Monitoring as required under the applicable operating scenario(s).</p> <p>In accordance with N.J.A.C. 7:27-19.15(a)2, any NOx testing conducted pursuant to this section shall be conducted concurrently with CO testing. The applicable NOx emission limits in N.J.A.C. 7:27-19 will not be considered to have been met unless the concurrent CO testing demonstrates compliance with the CO limit in N.J.A.C. 7:27-16.9 or the permit limit for CO, whichever is more stringent, is also met.[N.J.A.C. 7:27-22.16(o)].</p>	<p>Other: Recordkeeping as required under the applicable operating scenario(s). [N.J.A.C. 7:27-22.16(o)].</p>	<p>Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Emission Measurement Section (EMS) at Mail Code: 09-01, PO Box 420, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit (or within 30 days of a "peaking unit" capacity factor exceedance or within 30 days of exceeding 500 hours of oil firing, as applicable). The protocol and test report must be prepared and submitted on a CD using the Electronic Reporting Tool (ERT), unless another format is approved by EMS. The ERT program can be downloaded at: <a href="http://www.epa.gov/ttnchie1/ert">http://www.epa.gov/ttnchie1/ert</a>.</p> <p>Within 30 days of protocol approval or no less than 60 days prior to the testing deadline, whichever is later, the permittee must contact EMS at 609-984-3443 to schedule a mutually acceptable test date.</p> <p>A full stack test report must be submitted to EMS and a certified summary test report 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. [N.J.A.C. 7:27-22.18(e)] and . [N.J.A.C. 7:27-22.18(h)]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	<p>PERIODIC EMISSION MONITORING ALTERNATIVE FOR PEAKING UNITS:</p> <p>If the turbine is operated as a "Peaking Unit" as defined by the Acid Rain program of USEPA, at 40 CFR 72.2 (the average capacity factor of the unit does not exceed 10% over the previous 3 calendar years and annual capacity factor does not exceed 20% in each of those calendar years), annual periodic emission monitoring of NOx and CO shall be permitted in lieu of "RENEWAL STACK TEST SUMMARY" in OS Summary.</p> <p>Dual Fuel Turbines:                      For turbines permitted to combust either natural gas or fuel oil, periodic emission monitoring shall be required only on the fuel fired at the time of the test.                      *** Periodic emission monitoring shall only be allowed as an alternative to stack emission testing once initial stack emission testing has been performed and compliance has been demonstrated with all of the permit emission limits.                      *** If the average capacity factor of the unit exceeds 10% over the previous 3 calendar years or the annual capacity factor in any of those calendar years exceeds 20%, stack testing must be performed, in accordance with "RENEWAL STACK TEST SUMMARY" in OS Summary, for the permit term during which the exceedance occurs. If the exceedance occurs during the last 30 months of the permit term, the permittee shall:                      1) Within 30 days of the exceedance, submit a stack test protocol to EMS; and                      2) Within 1 year of the exceedance, conduct stack testing as per "RENEWAL STACK TEST SUMMARY" in OS Summary.                      [N.J.A.C. 7:27-22.16(a)]</p>	<p>Monitored by periodic emission monitoring annually of NOx, CO and O2; or continuous emission monitoring of NOx, CO and O2.</p> <p>Periodic emission monitoring for NOx, CO and O2 shall be consistent with the requirements specified in NJDEP Technical Manual 1005 posted on AQPP webpage at <a href="http://www.state.nj.us/dep/aqpp">http://www.state.nj.us/dep/aqpp</a>. The permittee shall use reference method or site specific method testing provided in the Technical Manual 1005 as part of any periodic monitoring procedure. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Submit a report: Annually.</p> <p>The permittee shall notify Enforcement at least 24 hours prior to performing periodic emission monitoring. Periodic emission monitoring for NOx, CO and O2 shall be performed annually in accordance with Technical Manual 1005 or by another method/procedure approved by EMS.</p> <p>Test reports shall be submitted to Chief, REO within 45 days following the end of each calendar year (starting with 2014) in the approved format to identify the facility name, emission unit, test date, and total operating hours for that year. The test results must be certified by a licensed professional engineer or by a certified industrial hygienist</p> <p>If the turbine is equipped with a CEMS unit, which continuously monitors NOx, CO and O2 during turbine operation, annual periodic monitoring is not required and therefore no periodic emission report is required to be submitted to the Department.</p> <p>If permit term stack testing is performed instead of periodic emission monitoring, no periodic emission monitoring report is required to be submitted to the Department. [N.J.A.C. 7:27-22.16(o)]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
4	<p>PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION:</p> <p>Periodic emission monitoring of NOx, CO and O2 shall be performed once during each non-ozone season that the turbine is operated.</p> <p>Dual Fuel Turbines: For turbines permitted to combust either natural gas or fuel oil, periodic emission monitoring shall be required only on the fuel fired at the time of the test.</p> <p>*** Periodic emission monitoring, pursuant to this condition, shall only be allowed if compliance has been demonstrated with "RENEWAL STACK TEST SUMMARY" or "PERIODIC EMISSION MONITORING ALTERNATIVE FOR PEAKING UNITS" in OS Summary, during the ozone season. If the required monitoring has not been performed, during the ozone season (for instance, if the turbine exceeds the "peaking unit" capacity threshold for the year, requiring stack testing to be performed but stack testing was not performed in the ozone season), such emission monitoring shall be performed upon turbine operation in the non-ozone season. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Monitored by periodic emission monitoring at the approved frequency. Once during each non-ozone season that the turbine is operated, perform periodic emission monitoring of NOx, CO and O2; or continuous emission monitoring of NOx, CO and O2.</p> <p>Periodic emission monitoring for NOx, CO and O2 shall be consistent with the requirements specified in NJDEP Technical Manual 1005 posted on AQPP webpage at <a href="http://www.state.nj.us/dep/aqpp">http://www.state.nj.us/dep/aqpp</a>. The permittee shall use reference method or site specific method testing provided in the Technical Manual 1005 as part of any periodic monitoring procedure. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Submit a report: Annually.</p> <p>The permittee shall notify Enforcement at least 24 hours prior to performing periodic emission monitoring. Periodic emission monitoring for NOx, CO and O2 shall be performed once during each non-ozone season that the turbine operates, in accordance with Technical Manual 1005 or by another method/procedure approved by EMS.</p> <p>Test reports shall be submitted to Chief, REO within 45 days following the end of each calendar year (starting with 2014) in the approved format to identify the facility name, emission unit, test date, and total operating hours for that year. The test results must be certified by a licensed professional engineer or by a certified industrial hygienist</p> <p>If the turbine is equipped with a cems unit, which continuously monitors NOx, CO and O2 during turbine operation, annual periodic monitoring is not required and therefore no periodic emission report is required to be submitted to the Department. [N.J.A.C. 7:27-22.16(o)]</p>

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5	<p><b>CEMS ALTERNATIVE TO RENEWAL STACK TEST FOR NO<sub>x</sub> AND CO:</b></p> <p>The permittee may propose, in the stack test protocol, to use CEMS data to satisfy the stack testing requirements, for NO<sub>x</sub> and/or CO, with EMS approval. In order for EMS to approve using CEMS data at the time of the stack test, the CEMS must be certified and be in compliance with all daily, quarterly and annual quality assurance requirements. The CEMS shall monitor and record emissions in units identical to those required by the applicable stack testing conditions of this permit. CEMS data, if allowed by this permit, shall be taken at the same worst case conditions as described for stack testing (See "RENEWAL STACK TEST SUMMARY" in OS Summary). [N.J.A.C. 7:27-22.16(a)]</p>	None.	Other: Maintain certification of CEMS and obtain approval to use CEMS data to satisfy the renewal stack testing requirements for NO <sub>x</sub> and CO from EMS through stack test protocol approval.[N.J.A.C. 7:27-22.16(o)].	None.
6	<p><b>CEMS REQUIREMENTS SUMMARY: (NO<sub>x</sub>, CO)</b></p> <p>The Permittee shall operate CEMS according to the approved certification and in compliance with daily, quarterly, and annual quality assurance requirements. The CEMS shall include continuous monitoring of all necessary parameters (e.g. oxygen, moisture, temperature, flow rate) to allow the required corrections to be applied to demonstrate compliance with the emission limits.</p> <p>The Permittee shall request approval from the Department's Emission Measurement Section (EMS) to allow continued use of the existing CEMS when a change to the units of measurement is made to a permit limit. [N.J.A.C. 7:27-22.16(a)]</p>	None.	Other: Maintain readily accessible records of the Permittee's written request to EMS, and the response from EMS . [N.J.A.C. 7:27-22.16(o)].	Comply with the requirement: Upon occurrence of event. Submit a written request to the EMS within 30 days from the date of the approved operating permit to determine whether a full CEMS recertification is required, whether the change can follow the procedures for data recording and storage equipment upgrades found in the Department's Technical Manual 1005 Section IV.B.3(f), or if continued use of the existing CEMS is allowed. [N.J.A.C. 7:27-22]

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7	The owner or operator shall develop a QA/QC plan for each CEMS/COMS required by this permit prepared in accordance with the NJDEP Technical Manual 1005 posted on the AQPP webpage at <a href="http://www.state.nj.us/dep/aqpp">http://www.state.nj.us/dep/aqpp</a> . [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 data and quarterly reports. [N.J.A.C. 7:27-22.16(o)].	None.
8	Periodic emission monitoring for NO <sub>x</sub> , CO, VOC and O <sub>2</sub> shall be consistent with the requirements specified in NJDEP Technical Manual 1005 posted on AQPP webpage at <a href="http://www.state.nj.us/dep/aqpp">http://www.state.nj.us/dep/aqpp</a> . The permittee shall use reference method or site specific method testing provided in the Technical Manual 1005 as part of any periodic monitoring procedure. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
9	CO ≤ 250 ppmvd @ 15% O <sub>2</sub> . VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(b)]	CO: Monitored by continuous emission monitoring system continuously, based on one calendar day not including periods of equipment downtime. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-16.23(a)1]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
10	<p>VOC (Total) &lt;= 50 ppmvd @ 15% O2. VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(c)]</p>	<p>VOC (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. Stack testing only required while combusting fuel oil pursuant to OS1. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>	<p>VOC (Total): Recordkeeping by stack test results prior to permit expiration date See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>
11	<p>The owner or operator of a stationary combustion turbine that has a maximum gross heat input rate of 25 million BTU per hour or more and associated duct burner (if a duct burner is installed) shall adjust the combustion process in accordance with the procedure set forth at N.J.A.C. 7:27-19.16(g) and in accordance with the manufacturer's recommended procedures and maintenance schedules for those sources. [N.J.A.C 7:27-22.16(a)], [N.J.A.C. 7:27-16.9(f)] and [N.J.A.C. 7:27-19.5(e)]</p>	<p>Other: Monitored by continuous emission monitoring (CEMS) or by periodic emission monitoring upon performing combustion adjustment. 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. [N.J.A.C. 7:27-19.16(g)].</p>	<p>Recordkeeping by data acquisition system (DAS) / electronic data storage upon performing combustion adjustment or by manual logging of parameter or storing data in a computer data system. The permittee shall record the following information for each adjustment in a log book or computer data system:</p> <ol style="list-style-type: none"> <li>1. The date and times the adjustment began and ended;</li> <li>2. The name, title, and affiliation of the person who performed the procedure and adjustment;</li> <li>3. The type of procedure and maintenance performed;</li> <li>4. The concentration of NOx, CO, and O2 measured before and after the adjustment was made; and</li> <li>5. The type and amount of fuel use since the last combustion adjustment was performed.</li> </ol> <p>The records shall be kept for a minimum of 5 years and be readily accessible to the Department upon request. [N.J.A.C. 7:27-19.16(h)]</p>	<p>None.</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
12	<p>An exceedance of an emission limit that occurs during an adjustment of the combustion process under N.J.A.C. 7:27-19.16(g) is not a violation of this subchapter if it occurs as a result of the adjustment. After the combustion adjustment has been completed, the maximum emission rate of any contaminant shall not exceed the maximum allowable emission rate applicable under this subchapter or under an operating permit issued pursuant to N.J.A.C. 7:27-22 or an applicable certificate issued pursuant to N.J.A.C. 7:27-8. [N.J.A.C. 7:27-19.16(f)]</p>	<p>None.</p>	<p>None.</p>	<p>None.</p>
13	<p>Hours of Operation &lt;= 2,500 hours per any 365 consecutive day period while combusting natural gas OR 1,500 hours per any 365 consecutive day period while combusting distillate fuel oil. If both fuels are combusted within a given year, the number of allowable operating hours for each fuel shall be determined using the following equations:</p> <p>if <math>x \leq 1,000</math> hours  <math>y = 2500 - [1.4505 * x]</math></p> <p>if <math>x &gt; 1,000</math> hours  <math>y = 3171 - [2.114 * x]</math></p> <p>where:  <math>x</math> = total hr/yr that liquid distillate fuel is combusted  <math>y</math> = total hr/yr that natural gas fuel is combusted</p> <p>The permittee shall limit operating hours on each fuel so that the annual emission limits specified in this permit are not exceeded. Total hours of operation shall not include start-up, shutdown, and fuel transfer periods. [N.J.A.C. 7:27-22.16(e)]</p>	<p>Hours of Operation: Monitored by hour/time monitor continuously, based on a consecutive 365 day period (rolling 1 day basis).</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Hours of Operation: Recordkeeping by data acquisition system (DAS) / electronic data storage daily. Maintain a record of total hours of operation while combusting distillate fuel oil and total hours of operation while combusting natural gas during each operating day.</p> <p>Total hours of operation, while combusting each fuel, shall be calculated daily, by adding the total hours of distillate fuel oil operation during a given day to the total hours of distillate fuel oil operation during the immediately preceding 364 calendar days and adding the total hours of natural gas operation during a given day to the total hours of natural gas operation during the immediately preceding 364 calendar days. These calculated values must comply with the applicable requirement. [N.J.A.C. 7:27-22.16(o)]</p>	<p>None.</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
14	<p>Fuel Oil Usage <math>\leq</math> 11.467 MMgals per any 365 consecutive day period. Maximum distillate fuel oil consumption for CT-1 (U1), based on maximum ozone season heat input of 1032 MMBtu/hr, a distillate fuel heating value of 0.135 MMBtu/gal and combustion of distillate fuel oil for 1500 hrs/yr.</p> <p>NOTE: This limit applies to total annual fuel oil consumption by U1 - this includes ozone season operation (OS1 / OS2) and non-ozone season operation (OS3 / OS4). [N.J.A.C. 7:27-22.16(a)]</p>	<p>Fuel Oil Usage: Monitored by fuel flow/firing rate instrument continuously, based on a consecutive 365 day period (rolling 1 day basis).</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Fuel Oil Usage: Recordkeeping by data acquisition system (DAS) / electronic data storage daily. Maintain a record of the fuel use in gallons each operating day.</p> <p>Gallons of distillate fuel oil consumed during any consecutive 365 day period shall be calculated by adding the gallons of distillate fuel consumed during a given day to the total gallons of distillate fuel consumed during the immediately preceding 364 calendar days. [N.J.A.C. 7:27-22.16(o)]</p>	None.
15	<p>Natural Gas Usage <math>\leq</math> 2,522 MMft<sup>3</sup> per any 365 consecutive day period. Maximum natural gas consumption for CT-1 (U1), based on maximum ozone season heat input of 1032 MMBtu/hr, a natural gas heating value of 1023 MMBtu/MMScf and combustion of natural gas for 2500 hrs/yr.</p> <p>NOTE: This limit applies to total annual natural gas consumption by U1 - this includes ozone season operation (OS5 / OS6) and non-ozone season operation (OS7 / OS8). [N.J.A.C. 7:27-22.16(a)]</p>	<p>Natural Gas Usage: Monitored by fuel flow/firing rate instrument continuously, based on a consecutive 365 day period (rolling 1 day basis).</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Natural Gas Usage: Recordkeeping by data acquisition system (DAS) / electronic data storage daily. Maintain a record of the fuel use in CUFT each operating day.</p> <p>Cubic Feet of natural gas consumed during any consecutive 365 day period shall be calculated by adding the cubic feet of natural gas consumed during a given day to the total cubic feet of natural gas consumed during the immediately preceding 364 calendar days. [N.J.A.C. 7:27-22.16(o)]</p>	None.
16	<p>Permittee must operate a Load Meter and Recorder to measure turbine loading in kilowatts (KW) of electrical power output. Combustion turbine shall not be operated outside the load range except during start-up, shutdown, maintenance, calibration, or testing. Load range shall be determined by stack tests that exhibited compliance with emission limits contained in this permit. [N.J.A.C. 7:27-22.16(e)]</p>	<p>Other: Monitored by turbine load meter continuously.[N.J.A.C. 7:27-22.16(e)].</p>	<p>Other: Data Acquisition System (DAS)/electronic data storage. During all operation of the turbine.[N.J.A.C. 7:27-22.16(e)].</p>	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
17	<p>The permittee shall record each period of unit maintenance and calibration during which the water injection system is not operating.</p> <p>Maintenance is defined as those actions that are necessary to keep the combustion turbine operating in an acceptable manner.</p> <p>Calibration is defined as those actions that are necessary to assure all instrumentation is operating within its intended accuracy band. [N.J.A.C. 7:27-22.16(e)]</p>	<p>Monitored by hour/time monitor continuously.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. Records shall be kept of each period of combustion turbine maintenance or calibration during which the water injection system is not operating. Records shall show start time, end time, date, total time, reason, measures to be taken for preventing a recurrence, emissions during the period and name of operator making the entry. The records should be kept in a permanent form suitable for inspections. [N.J.A.C. 7:27-22.16(e)]</p>	None.
18	<p>The combustion turbine is authorized to be equipped with an Inlet Air Fogging system to introduce atomized demineralized water to cool and humidify the gas turbine inlet air. [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.
19	<p>The Inlet Air Fogging system shall only be used on the combustion turbine during periods when the ambient air temperature is above 50 degrees Fahrenheit. [N.J.A.C. 7:27-22.16(a)]</p>	None.	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. Records shall show the following:</p> <ol style="list-style-type: none"> <li>1) Inlet air fogging start time and date;</li> <li>2) Inlet air fogging end time and date;</li> <li>3) Total duration of inlet air fogging;</li> <li>4) Ambient air temperature; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>. [N.J.A.C. 7:27-22.19(a)]</p>	None.

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20	NOx (Total) <= 120 tons/yr. Based on ozone season combustion of natural gas (permit limit = 96 lb/hr), for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by continuous emission monitoring system continuously, based on a consecutive 12 month period (rolling 1 month basis). See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary.  A monthly emission rate shall be determined, based on the CEMS data.  Total annual emissions shall be calculated, each month, by adding the monthly emission rate for that month to the sum of the monthly emission rates for the immediately preceding 11 calendar months.  Each month, the permittee shall record the monthly emission rate as well as the annual emission rate, calculated above, for that month. These records shall be maintained in a permanently bound logbook or a readily accessible computer data system. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.16(o)]

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
21	CO <= 146 tons/yr. Based on ozone season combustion of natural gas (permit limit = 117 lb/hr), for 2500 hours. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by continuous emission monitoring system continuously, based on a consecutive 12 month period (rolling 1 month basis). See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary.  A monthly emission rate shall be determined, based on the CEMS data.  Total annual emissions shall be calculated, each month, by adding the monthly emission rate for that month to the sum of the monthly emission rates for the immediately preceding 11 calendar months.  Each month, the permittee shall record the monthly emission rate as well as the annual emission rate, calculated above, for that month. These records shall be maintained in a permanently bound logbook or a readily accessible computer data system. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]
22	VOC (Total) <= 18.8 tons/yr. This limit includes formaldehyde emissions. Based on ozone season combustion of natural gas (permit limit = 15 lb/hr), for 2500 hours. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

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23	<p>SO2 &lt;= 3.44 tons/yr. Based on ozone season combustion of distillate fuel oil with a sulfur content of 0.0044% (permit limit = 4.59 lb/hr), for 1500 hours. (February 14, 2018 sulfur content testing of the fuel in the fuel tanks (IS7) shows the sulfur content to be 0.0044%).</p> <p>This emission limit is based on combustion of 0.0044% sulfur distillate oil and applies only until the calendar year after tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in the fuel tank is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in the tank has dropped to 0.0015%, during the following calendar year, the 0.0015% sulfur fuel oil based SO2 emission limit below replaces this permit requirement as the effective annual SO2 emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.

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24	<p>SO2 &lt;= 1.17 tons/yr. Based on ozone season combustion of distillate fuel oil with a sulfur content of 0.0015% (permit limit = 1.56 lb/hr), for 1500 hours.</p> <p>Since the Permittee will continue to combust any 0.0044% sulfur distillate fuel oil that remains in the fuel storage tank and this remaining fuel may mix with the ULSD fuel, creating a fuel mixture with an aggregate sulfur content higher than 0.0015%, this requirement does not apply until the calendar year after fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in the fuel tank is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in the tank has dropped to 0.0015%, during the following calendar year, this permit requirement replaces the 0.0044% sulfur fuel oil based SO2 emission limit, above, as the effective annual SO2 emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.
25	<p>TSP &lt;= 9 tons/yr. Based on ozone season combustion of distillate fuel oil (permit limit = 12 lb/hr), for 1500 hours. [N.J.A.C. 7:27-22.16(e)]</p>	None.	None.	None.
26	<p>PM-10 (Total) &lt;= 13.8 tons/yr. Based on ozone season combustion of natural gas (permit limit = 11 lb/hr), for 2500 hours. [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.
27	<p>PM-2.5 (Total) &lt;= 13.8 tons/yr. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
28	Methane <= 2.83 tons/yr. Based on combustion of all permitted natural gas (permit limit = 2522 MMScf/yr), a natural gas heating value of 1020 MMBtu/MMScf and 40 CFR 98, Subpart C, Table C-2 emission factor of 1.0 g/MMBtu.. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
29	Nitrous oxide <= 0.283 tons/yr. Based on combustion of all permitted natural gas (permit limit = 2522 MMScf/yr), a natural gas heating value of 1020 MMBtu/MMScf and 40 CFR 98, Subpart C, Table C-2 emission factor of 0.1 g/MMBtu.. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
30	HAPs (Total) <= 1.81 tons/yr. Based on the sum of all permitted HAPs (those with a PTE above the N.J.A.C.7:27-17 reporting threshold). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
31	Acetaldehyde <= 0.0516 tons/yr. Based on ozone season combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
32	Acrolein <= 0.00826 tons/yr. Based on ozone season combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
33	Arsenic Emissions <= 0.00851 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
34	Benzene <= 0.0426 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
35	Beryllium Emissions <= 0.00024 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
36	Butadiene (1,3-) <= 0.0124 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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37	Cadmium Emissions <= 0.00372 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
38	Ethylbenzene <= 0.0413 tons/yr. Based on ozone season combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
39	Formaldehyde <= 0.916 tons/yr. Based on ozone season combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
40	Pb <= 0.0108 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
41	Manganese Emissions <= 0.612 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
42	Naphthalene <= 0.0271 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
43	Nickel Emissions <= 0.00356 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
44	Polynuclear aromatic hydrocarbons (PAHs) <= 0.031 tons/yr. Based on ozone season combustion of distillate fuel oil for 1500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
45	Propylene oxide <= 0.0374 tons/yr. Based on ozone season combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
46	Any individual hazardous air pollutant emissions, not specifically listed in this permit, are below the reporting thresholds listed in N.J.A.C. 7:27-17. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
47	All requests, reports, applications, submittals, and other communications to the Administrator pursuant to Part 60 shall be submitted in duplicate to the Regional Office of US Environmental Protection Agency. Submit information to: Director, Division of Enforcement & Compliance Assistance, US EPA, Region 2, 290 Broadway, New York, NY 10007-1866. [40 CFR 60.4(a)]	None.	None.	Submit a report: As per the approved schedule to EPA Region 2 as required by 40 CFR 60. [40 CFR 60.4(a)]
48	Copies of all information submitted to EPA pursuant to 40 CFR Part 60, must also be submitted to the appropriate Regional Enforcement Office of NJDEP. [40 CFR 60.4(b)]	None.	None.	Submit a report: As per the approved schedule to the appropriate Regional Enforcement Office of NJDEP as required by 40 CFR 60. [40 CFR 60.4(b)]
49	The owner or operator subject to the provisions of 40 CFR Part 60 shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR 60.14(e). The notification shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of facility before and after the change and the expected completion date of the change. Notification shall be postmarked within 60 days or as soon as practicable before any change is commenced. The Administrator may request additional relevant information subsequent to this notice. [40 CFR 60.7(a)(4)]	None.	None.	Submit notification: Upon occurrence of event to EPA Region 2 and the appropriate Regional Enforcement Office of NJDEP as required by 40 CFR 60.7 [40 CFR 60.7(a)(4)]

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Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
50	The owner or operator shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility, any malfunction of air pollution control equipment or any periods during which continuous monitoring system or monitoring device is inoperative. [40 CFR 60.7(b)]	None.	Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. The records should be kept in a permanent form suitable for inspections. [40 CFR 60.7(b)]	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Semi-annually beginning on the 30th day of the 6th month following initial performance tests. The report shall contain the information required in 40 CFR 60.7(b) and be postmarked by the 30th day following the end of each six-month period. The report shall be submitted to the EPA Region 2 Administrator and the appropriate Regional Enforcement Office of NJDEP and be in the format specified at 40 CFR Part 60.7(c) and 40 CFR Part 60.7(d). [40 CFR 60.7(c)]
51	Each owner or operator required to install a continuous monitoring device shall submit an excess emissions and monitoring systems performance report (excess emissions are defined in applicable subparts) and/or a summary report form (see section 60.7(d)) to the Administrator semiannually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. All reports shall be postmarked by the 30th day following the end of each six-month period. [40 CFR 60.7(c)]	None.	Other: Written reports of excess emissions shall include the following information: (1) The magnitude of excess emissions computed in accordance with section 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period and excess emissions. The process operating time during the reporting period. (2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted. (3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. (4) 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. [40 CFR 60.7(c)].	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Semi-annually beginning on the 30th day of the 6th month following initial performance tests. The report shall be postmarked by the 30th day following the end of each six-month period. The report shall be submitted to the EPA Region 2 Administrator and the appropriate Regional Enforcement Office of NJDEP and be in the format specified at 40 CFR Part 60.7(c) and 40 CFR Part 60.7(d). [40 CFR 60.7(c)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
52	The owner or operator shall maintain a file, suitable for inspection, of all monitoring measurements as indicated in Recordkeeping Requirement column. [40 CFR 60.7(f)]	None.	Other: The file shall include all measurements (including continuous monitoring system, monitoring device, and performance testing measurements), all continuous monitoring system performance evaluations, all continuous monitoring system or monitoring device calibration checks, all adjustments/maintenance performed on these systems or devices, and all other information required by 40 CFR Part 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the dates of the record, except as prescribed in 40 CFR 60.7(f)(1) through (3). Sources subject to 40 CFR 70, are required to retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application, per 40 CFR 70.6(a)(3)(ii)(B). [40 CFR 60.7(f)].	None.
53	The NSPS opacity standard shall apply at all times except during periods of startup, shutdown, malfunctions and as otherwise specified in the applicable standard. [40 CFR 60.11(c)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
54	At all times, including periods of start-up, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility 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 Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operation and maintenance procedures, and inspection of the source. [40 CFR 60.11(d)]	None.	None.	None.
55	No owner or operator subject to NSPS standards in Part 60, shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere. [40 CFR 60.12]	None.	None.	None.
56	The owner or operator shall perform zero and span adjustments at least once each operating day for continuous emission monitors and continuous opacity monitors following procedures outlined in 40 CFR Part 60.13(d)1 & 2. [40 CFR 60.13(d)]	None.	Other: Maintain records in accordance with 40 CFR 60.7(f). [40 CFR 60.13(d)].	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
57	Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all continuous monitoring systems referenced by 40 CFR 60.13(c) measuring emissions except opacity shall be in continuous operation. They shall complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute period. [40 CFR 60.13(e)(2)]	Other: See Applicable Requirement. [40 CFR 60.13(e)(2)].	Other: See Applicable Requirement. [40 CFR 60.13(e)(2)].	None.
58	All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of Appendix B of 40 CFR Part 60 shall be used. [40 CFR 60.13(f)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
59	<p>The owner or operator of all continuous monitoring systems (other than opacity) shall reduce all data to 1-hour averages for time periods. One-hour period is defined in 40 CFR 60.2 as any 60-minute period commencing on the hour. For a full operating hour, 1-hour averages shall be computed from at least four valid data points, i.e., one data point in each of the 15-minute quadrants of the hour. For a partial operating hour (any clock hour with less than 60 minutes of unit operation), the owner or operator shall follow all the procedures specified at 40 CFR 60.13(h)(2) to compute 1-hour averages. Data recorded during periods of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph. The owners and operators complying with the requirements in 40 CFR 60.7(f)(1) or (2) must include any data recorded during periods of monitor breakdown or malfunction in the data averages. Either arithmetic or integrated averaging of all data may be used to calculate the hourly averages. The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O<sub>2</sub> or ng/J of pollutant). [40 CFR 60.13(h)(2)]</p>	None.	Other: See Applicable Requirement. [40 CFR 60.13(h)].	None.
60	<p>All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in the applicable subparts. After conversion into units of the standard, the data may be rounded to the same number of significant digits as used in the applicable subpart to specify the emission limit. [40 CFR 60.13(h)(3)]</p>	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
61	Changes in time periods for submittal of information and postmark deadlines set forth in this subpart, may be made only upon approval by the Administrator and shall follow procedures outlined in 40 CFR Part 60.19. [40 CFR 60.19]	None.	None.	None.
62	NOx (Total) <= 75 ppmvd @ 15% O2. [40 CFR 60.332(a)(1)]	NOx (Total): Monitored by stack emission testing once initially, based on each of three Department validated stack test runs. Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.335. If the turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel. Performance testing is not required for any emergency fuel as defined in 40 CFR 60.331. [40 CFR 60.335]	None.	None.
63	The owner or operator may, as alternative to operating the continuous monitoring system described in 40 CFR 60.334(a), install, certify, maintain operate, and quality-assure a continuous monitoring system (CEMS) consisting of NOx and O2 monitors. As an alternative, a CO2 monitor may be used to adjust the measured NOx concentrations. Each CEMS must be installed and certified according to PS 2 and 3 of 40 CFR Part 60 Appendix B. If the owner or operator has installed a NOx CEMS to meet the requirements 40 CFR Part 75 and is continuing to meet the ongoing requirements of 40 CFR Part 75, the CEMS may be used to meet the requirements of this section. If CEMS in conformance with 40 CFR Part 75 is used, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report. [40 CFR 60.334(b)]	Monitored by continuous emission monitoring system continuously. [40 CFR 60.334]	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
64	The owner or operator shall submit reports of excess emissions and monitor downtime for Nitrogen oxides. Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of reports required under 40 CFR 60.7(c), periods of excess emissions and monitor downtime that shall be reported are defined in 40 CFR 60.334(j)(1)(i) or (iii) as follows: (i) for turbines using water or steam to fuel ratio monitoring - any unit operating hour for which the average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio determined by the performance test (40 CFR 60.8) to demonstrate compliance with the NOx concentration limit specified in 60.332; Any unit operating hour in which no water or steam is injected shall also be considered an excess emissions; or (iii) for turbines using NOx and diluent CEMS - any unit operating hour during which the 4-hour rolling average NOx concentration exceeds the applicable NOx emission limit specified in 60.332. [40 CFR 60.334(j)(1)]	None.	None.	Submit an Excess Emissions and Monitoring Systems Performance Report (EEMPR): Semi-annually beginning on the 30th day of the 6th month following initial performance tests. Each report shall include the average steam or water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, as applicable and, (if applicable) the nitrogen content of the fuel during each excess emission. Pursuant to 40 CFR 60.334(j)5, all reports shall be postmarked by the 30th day following the end of each 6-month period. [40 CFR 60.334(j)(1)]
65	CSAPR: The permittee shall comply with all the attached requirements of Cross-State Air Pollution Rule (CSAPR) for the CSAPR NOx Annual Trading Program, CSAPR NOx Ozone Season Trading Program, and CSAPR SO2 Group 1 Trading Program applicable to this affected unit. See CSAPR Attachment (appendix I). [40 CFR 97]	Other: See the monitoring requirements in the CSAPR Attachment (Appendix I).[40 CFR 97].	Other: See the recordkeeping requirements in the CSAPR Attachment (Appendix I).[40 CFR 97].	Other (provide description): Other See the submittal requirements in the CSAPR Attachment (Appendix I). [40 CFR 97]
66	The permittee shall comply with all of the requirements of the Phase II Acid Rain Permit issued for this affected unit. [40 CFR 72]	Other: See attached Phase II Acid Rain Permit. (Appendix II).[40 CFR 72].	Other: See attached Phase II Acid Rain Permit. (Appendix II).[40 CFR 72].	Comply with the requirement: As per the approved schedule. See attached Phase II Acid Rain Permit. (Appendix II). [40 CFR 72]

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**Emission Unit:** U1 Combustion Turbine

**Operating Scenario:** OS1 ULSD Fired Turbine Operating During the Ozone Season

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	This Operating Scenario shall only apply to fuel oil combustion in unit 1, during the ozone season (May 1 through September 30). [N.J.A.C. 7:27-22.16(o)]	None.	None.	None.
2	<p>This turbine shall not combust ULSD during any High Electric Demand Day (HEDD), as defined below, unless combusting natural gas is not possible due to gas curtailment. If this turbine combusts ULSD on an HEDD due to natural gas curtailment, the NOx emissions shall comply with the ULSD emission limit of 1.6 lb/MWhr.</p> <p>"High electric demand day" or "HEDD" means the day following a day in which the next day forecast load is estimated to have a peak value of 52,000 megawatts or higher as predicted by the PJM Interconnection 0815 update to its Mid Atlantic Region Hour Ending Integrated Forecast Load, available from PJM Interconnection at <a href="http://oasis.pjm.com/doc/projload.txt">http://oasis.pjm.com/doc/projload.txt</a>. N.J.A.C. 7:27-19(g)2 and [N.J.A.C. 7:27-22.16(a)]</p>	<p>Other: Identify each HEDD, pursuant to the definition in the applicable requirement. Ensure that ULSD is not combusted during an HEDD, unless combusting natural gas is not possible due to gas curtailment. [N.J.A.C. 7:27-22.16(o)].</p>	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. Maintain a record of all HEDDs, pursuant to the definition in the applicable requirement. If ULSD is combusted during an HEDD due to natural gas curtailment, maintain a record from the gas supplier / transporter that natural gas was curtailed during the period while ULSD was combusted. [N.J.A.C. 7:27-22.16(o)]</p>	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	<p>Opacity &lt;= 20 %. Visible emissions from stationary combustion turbines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27- 3.5]</p>	<p>Opacity: Monitored by visual determination at the approved frequency. Visual Determination in Accordance with N.J.A.C. 7:27B-2 shall be conducted by a certified smoke reader once every 100 hours of oil firing operation.</p> <p>Monitoring and recordkeeping may occur at a lesser frequency if circumstances prohibit conducting a visual determination (e.g., nighttime operation, weather conditions, unplanned dispatching, etc.) within the 100 hour timeframe. However, in no case shall the interval between visual determinations exceed 125 hours of oil firing operation. If the visual observation occurs at a lesser frequency than every 100 hours of oil firing operation, the reason for monitoring at the lesser frequency shall also be recorded.</p> <p>Installation and operation of a continuous opacity monitor on a given turbine is required if actual distillate oil operation exceeds 500 hours in a calendar year. [N.J.A.C. 7:27-22.16(e)]</p>	<p>Opacity: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event (See Monitoring Requirement). The records should be kept in a permanent form suitable for inspections. [N.J.A.C. 7:27-22.16(e)]</p>	<p>If actual distillate oil operation exceeds 500 hours in any calendar year, submit a monitoring protocol, pursuant to N.J.A.C.7:27-22.18(a), to the Emission Measurement Section, within 90 days of exceeding the 500 hour threshold. Installation and operation of the monitor is required within 180 days of exceeding the 500-hour threshold. Refer to N.J.A.C.7:27-22.18 and 19 for other applicable requirements.</p> <p>If a COMs is installed, 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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.19(d)3]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
4	<p>Opacity <math>\leq</math> 10 %. Visible emissions from stationary combustion turbines shall not exceed 10% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds.</p> <p>NOTE: This limitation applies when combusting fuel oil with a fuel sulfur content of 15 ppmw or less. This limit does not apply until the aggregate sulfur content of the fuel oil in the fuel storage tanks drops to 15 ppmw. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Opacity: Monitored by visual determination at the approved frequency. Visual Determination in Accordance with N.J.A.C. 7:27B-2 shall be conducted by a certified smoke reader once every 100 hours of oil firing operation.</p> <p>Monitoring and recordkeeping may occur at a lesser frequency if circumstances prohibit conducting a visual determination (e.g., nighttime operation, weather conditions, unplanned dispatching, etc.) within the 100 hour timeframe. However, in no case shall the interval between visual determinations exceed 125 hours of oil firing operation. If the visual observation occurs at a lesser frequency than every 100 hours of oil firing operation, the reason for monitoring at the lesser frequency shall also be recorded.</p> <p>Installation and operation of a continuous opacity monitor on a given turbine is required if actual distillate oil operation exceeds 500 hours in a calendar year. [N.J.A.C. 7:27-22.16(e)]</p>	<p>Opacity: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event (See Monitoring Requirement). The records should be kept in a permanent form suitable for inspections. [N.J.A.C. 7:27-22.16(e)]</p>	<p>If actual distillate oil operation exceeds 500 hours in any calendar year, submit a monitoring protocol, pursuant to N.J.A.C.7:27-22.18(a), to the Emission Measurement Section, within 90 days of exceeding the 500 hour threshold. Installation and operation of the monitor is required within 180 days of exceeding the 500-hour threshold. Refer to N.J.A.C.7:27-22.18 and 19 for other applicable requirements.</p> <p>If a COMs is installed, 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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.19(d)3]</p>
5	<p>Particulate Emissions <math>\leq</math> 103 lb/hr. Particulate emission limit from the combustion of distillate oil based on rated heat input of 1032 MMBtu/hr. [N.J.A.C. 7:27- 4.2(a)]</p>	<p>Particulate Emissions: Monitored by stack emission testing prior to permit expiration date, based on each of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Particulate Emissions: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>
6	<p>Sulfur Content in Fuel <math>\leq</math> 15 ppmw (0.0015 % by weight). Maximum allowable sulfur content in No. 2 and lighter fuel oil. [N.J.A.C. 7:27- 9.2(b)]</p>	<p>Sulfur Content in Fuel: Monitored by review of fuel delivery records per delivery. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Sulfur Content in Fuel: Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(o)]</p>	<p>None.</p>
7	<p>Fuel stored in New Jersey that met the applicable maximum sulfur content standard of Tables 1A or 1B of N.J.A.C. 7:27-9.2 at the time it was stored in New Jersey may be used in New Jersey after the operative date of the applicable standard in 1B. [N.J.A.C. 7:27- 9.2(b)]</p>	<p>None.</p>	<p>None.</p>	<p>None.</p>

U1 Combustion Turbine

OS1

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
8	Sulfur Content in Fuel $\leq$ 0.0044 % by weight. Maximum allowable sulfur content in fuel oil, based on February 14, 2018 sampling of fuel tank. [N.J.A.C. 7:27-22.16(a)]	Sulfur Content in Fuel: Monitored by review of fuel delivery records per delivery. [N.J.A.C. 7:27-22.16(e)]	Sulfur Content in Fuel: Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(e)]	None.
9	NO <sub>x</sub> (Total) $\leq$ 1.6 lb/MW-hr. NO <sub>x</sub> RACT emission limit applies during all periods of distillate fuel oil combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	NO <sub>x</sub> (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 "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NO <sub>x</sub> (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(o)]
10	NO <sub>x</sub> (Total) $\leq$ 1.6 lb/MW-hr. NO <sub>x</sub> RACT emission limit applies during all periods of distillate fuel oil combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	NO <sub>x</sub> (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NO <sub>x</sub> (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
11	Turbine fuel limited to distillate fuel oil. Sulfur content of the distillate fuel oil must comply with all requirements in this permit. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing materials delivered. [N.J.A.C. 7:27-22.16(o)]	None.
12	Maximum Gross Heat Input $\leq$ 1,032 MMBTU/hr (HHV). Maximum heat input for the turbine (U1), during ozone season distillate fuel oil combustion. [N.J.A.C. 7:27-22.16(e)]	Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously. [N.J.A.C. 7:27-22.16(e)]	Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. [N.J.A.C. 7:27-22.16(o)]	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
13	NOx (Total) <= 50 ppmvd @ 15% O2. Maximum emission rate while combusting distillate fuel oil. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
14	NOx (Total) <= 50 ppmvd @ 15% O2. Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
15	NOx (Total) <= 0.2 lb/MMBTU. Maximum emission rate while combusting distillate fuel oil. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
16	NOx (Total) <= 0.2 lb/MMBTU. Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
17	NOx (Total) <= 154 lb/hr. Maximum emission rate while combusting distillate fuel oil. Based on NOx RACT emission limit (1.6 lb/MWhr) and maximum electrical output (96 MW) from the turbine. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
18	NOx (Total) <= 154 lb/hr. Maximum emission rate while combusting distillate fuel oil. Based on NOx RACT emission limit (1.6 lb/MWhr) and maximum electrical output (96 MW) from the turbine. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
19	CO <= 50 ppmvd @ 15% O2. Maximum emission rate while combusting distillate fuel oil. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
20	CO <= 50 ppmvd @ 15% O2. Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
21	CO <= 117 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
22	CO <= 117 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
23	VOC (Total) <= 50 ppmvd @ 15% O2. This limit includes formaldehyde emissions. Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	VOC (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	VOC (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
24	VOC (Total) <= 15 lb/hr. This limit includes formaldehyde emissions. Maximum emission rate while combusting distillate fuel oil during the ozone season. [N.J.A.C. 7:27-22.16(e)]	VOC (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	VOC (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
25	SO2 <= 4.59 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on combustion of 0.0044% sulfur distillate fuel oil, AP-42 emission factor (0.004444 lb/MMBtu) and heat input of 1032 MMBtu/hr.  This emission limit is based on combustion of 0.0044% sulfur distillate oil and applies only until fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in both of the fuel tanks is no more than 0.0015%.  Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the fuel tanks has dropped to 0.0015%, the 0.0015% sulfur fuel oil based SO2 emission limit below replaces this permit requirement as the effective hourly SO2 emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
26	<p>SO<sub>2</sub> ≤ 1.56 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on combustion of 0.0015% sulfur distillate fuel oil, AP-42 emission factor (0.001515 lb/MMBtu) and heat input of 1032 MMBtu/hr.</p> <p>Since the Permittee will continue to combust any 0.0044% sulfur distillate fuel oil that remains in the fuel storage tanks and this remaining fuel may mix with the ULSD fuel, creating a fuel mixture with an aggregate sulfur content higher than 0.0015%, this requirement does not apply until fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in both of the fuel tanks is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the fuel tanks has dropped to 0.0015%, this permit requirement replaces the 0.0044% sulfur fuel oil based SO<sub>2</sub> emission limit, above, as the effective hourly SO<sub>2</sub> emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.
27	TSP ≤ 12 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. [N.J.A.C. 7:27-22.16(e)]	TSP: Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	TSP: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
28	PM-10 (Total) ≤ 16 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. [N.J.A.C. 7:27-22.16(a)]	PM-10 (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	PM-10 (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
29	PM-2.5 (Total) <= 16 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	PM-2.5 (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	PM-2.5 (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
30	Methane <= 6.82 lb/hr. Based on permitted maximum heat input of 1032 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 3.0 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Methane: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
31	Nitrous oxide <= 1.36 lb/hr. Based on permitted maximum heat input of 1032 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 0.6 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Nitrous oxide: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
32	Arsenic Emissions <= 0.0114 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (1.1E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Arsenic Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
33	Benzene <= 0.0568 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (5.5E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Benzene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
34	Beryllium Emissions <= 0.00032 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (3.1E-7 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Beryllium Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
35	Butadiene (1,3-) <= 0.0165 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (1.6E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Butadiene (1,3-): Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
36	Cadmium Emissions <= 0.00495 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (4.8E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Cadmium Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
37	Formaldehyde <= 0.289 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (2.8E-4 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Formaldehyde: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
38	Pb <= 0.0145 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (1.4E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Pb: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
39	Manganese Emissions <= 0.815 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (7.9E-4 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Manganese Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
40	Naphthalene <= 0.0361 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (3.5E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Naphthalene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
41	Nickel Emissions $\leq$ 0.00475 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (4.6E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Nickel Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
42	Polynuclear aromatic hydrocarbons (PAHs) $\leq$ 0.0413 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (4.0E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Polynuclear aromatic hydrocarbons (PAHs): Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
43	Any individual hazardous air pollutant emissions, not specifically listed in this permit, are below the reporting thresholds listed in N.J.A.C. 7:27-17. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
44	Sulfur Content in Fuel $\leq$ 0.8 % by weight. No owner or operator subject to the provisions of this subpart shall burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). [40 CFR 60.333(b)]	Other: Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.334(h) and 60.335. A minimum of three fuel samples shall be collected during the performance test. [40 CFR 60.335].	None.	None.
45	The owner or operator shall monitor the total sulfur content of the fuel being fired in the turbine if the fuel fired in the turbine does not meet the definition of natural gas as provided in 40 CFR 60.331(u). The owner or operator shall use the methods specified in 40 CFR 60.335(b)10. The analyses 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 60.334(h)(1)]	Monitored by grab sampling at the approved frequency. Sulfur content values shall be determined on each occasion that fuel is transferred to the storage tank from any other source. If a custom fuel monitoring schedule has previously been approved, the owner or operator may continue monitoring on this schedule without submitting a special petition to the Administrator. [40 CFR 60.334(i)]	Recordkeeping by certified lab analysis results at the approved frequency. The owner or operator shall record the results of each analysis for fuel sulfur content. [40 CFR 60.334(i)]	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
46	The owner or operator may elect not to monitor nitrogen content of the fuel being fired in the turbine if the owner or operator does not claim an allowance for fuel bound nitrogen. [40 CFR 60.334(h)(2)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator does not claim an allowance for fuel bound nitrogen. The allowable NOx emission concentration included in this permit was calculated in accordance with 40 CFR 60.332(a). In calculations, NOx emission allowance (F-value) of zero was accepted. [40 CFR 60.334(h)(2)]

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**Emission Unit:** U1 Combustion Turbine

**Operating Scenario:** OS2 ULSD Fired Turbine - Start-up and Shut Down During the Ozone Season

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	<p>Start-up Period &lt;= 30 minutes.</p> <p>Startup commences with initiation of the combustion of fuel in the combustion turbine and concludes when the turbine reaches steady state operation at 80% - 100% of design capacity, or when combustion is ceased prior to attaining steady state operation (for instance, if start-up is abandoned due to equipment malfunction).</p> <p>The duration of start-up shall not exceed 30 minutes. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Start-up Period: Monitored by hour/time monitor upon occurrence of event and by load meter upon occurrence of event.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Start-up Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. Records shall show:</p> <ol style="list-style-type: none"> <li>1) Start-up start time;</li> <li>2) Start-up end time</li> <li>3) Date</li> <li>4) Total start-up duration; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>[N.J.A.C. 7:27-22.16(o)]</p>	None.
2	<p>Shutdown Period &lt;= 30 minutes.</p> <p>Shutdown commences with initiation of lowering turbine power output below 80% of base load, with the intent to cease generation of electrical power output, and concludes with the cessation of the combustion turbine operation.</p> <p>The duration of shut down, shall not exceed 30 minutes.</p> <p>Nothing in this condition shall preclude the continuous operation of the turbine at a load range below 80% of the base load provided, during stack tests, the turbine exhibits compliance with all applicable emission limits at that load range. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Shutdown Period: Monitored by hour/time monitor upon occurrence of event and by load meter upon occurrence of event.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Shutdown Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. Records shall show:</p> <ol style="list-style-type: none"> <li>1) Shut down start time;</li> <li>2) Shut down end time</li> <li>3) Date</li> <li>4) Total shut down duration; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>[N.J.A.C. 7:27-22.16(o)]</p>	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	Opacity <= 20 %. Visible emissions from stationary combustion turbines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27- 3.5]	<p>Opacity: Monitored by visual determination at the approved frequency. Visual Determination in Accordance with N.J.A.C. 7:27B-2 shall be conducted by a certified smoke reader once every 100 hours of oil firing operation.</p> <p>Monitoring and recordkeeping may occur at a lesser frequency if circumstances prohibit conducting a visual determination (e.g., nighttime operation, weather conditions, unplanned dispatching, etc.) within the 100 hour timeframe. However, in no case shall the interval between visual determinations exceed 125 hours of oil firing operation. If the visual observation occurs at a lesser frequency than every 100 hours of oil firing operation, the reason for monitoring at the lesser frequency shall also be recorded.</p> <p>Installation and operation of a continuous opacity monitor on a given turbine is required if actual distillate oil operation exceeds 500 hours in a calendar year. [N.J.A.C. 7:27-22.16(o)]</p>	Opacity: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event (See Monitoring Requirement). The records should be kept in a permanent form suitable for inspections. [N.J.A.C. 7:27-22.16(o)]	<p>If actual distillate oil operation exceeds 500 hours in any calendar year, submit a monitoring protocol, pursuant to N.J.A.C.7:27-22.18(a), to the Emission Measurement Section (EMS), within 90 days of exceeding the 500 hour threshold. Installation and operation of the monitor is required within 180 days of exceeding the 500-hour threshold. Refer to N.J.A.C.7:27-22.18 and 19 for other applicable requirements.</p> <p>If a COMs is installed, 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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.19(d)3]</p>
4	Particulate Emissions <= 103 lb/hr. Particulate emission limit from the combustion of distillate oil based on rated heat input of 1032 MMBtu/hr. [N.J.A.C. 7:27- 4.2(a)]	None.	None.	None.
5	Sulfur Content in Fuel <= 15 ppmw (0.0015 % by weight). Maximum allowable sulfur content in No. 2 and lighter fuel oil. [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 / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(o)]	None.
6	Fuel stored in New Jersey that met the applicable maximum sulfur content standard of Tables 1A or 1B of N.J.A.C. 7:27-9.2 at the time it was stored in New Jersey may be used in New Jersey after the operative date of the applicable standard in 1B. [N.J.A.C. 7:27- 9.2(b)]	None.	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
7	Sulfur Content in Fuel <= 0.0044 % by weight. Maximum allowable sulfur content in fuel oil, based on February 14, 2018 sampling of fuel tank. [N.J.A.C. 7:27-22.16(a)]	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 / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(o)]	None.
8	Turbine fuel limited to distillate fuel oil. Sulfur content of the distillate fuel oil must comply with all requirements in this permit. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing materials delivered. [N.J.A.C. 7:27-22.16(o)]	None.
9	Maximum Gross Heat Input <= 1,032 MMBTU/hr (HHV). Maximum heat input for the turbine (U1), during ozone season distillate fuel oil combustion. [N.J.A.C. 7:27-22.16(a)]	Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously. [N.J.A.C. 7:27-22.16(o)]	Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. [N.J.A.C. 7:27-22.16(o)]	None.
10	NOx (Total) <= 1.6 lb/MW-hr. NOx RACT emission limit applies during all periods of distillate fuel oil combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	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 "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
11	CO <= 250 ppmvd @ 15% O2. VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(b)]	CO: Monitored by continuous emission monitoring system continuously, based on one calendar day not including periods of equipment downtime. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-16.23(a)1]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]
12	VOC (Total) <= 50 ppmvd @ 15% O2. VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(c)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
13	<p>SO2 &lt;= 4.59 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on combustion of 0.0044% sulfur distillate fuel oil, AP-42 emission factor (0.004444 lb/MMBtu) and heat input of 1032 MMBtu/hr.</p> <p>This emission limit is based on combustion of 0.0044% sulfur distillate oil and applies only until fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in both of the fuel tanks is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the fuel tanks has dropped to 0.0015%, the 0.0015% sulfur fuel oil based SO2 emission limit below replaces this permit requirement as the effective hourly SO2 emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
14	<p>SO2 &lt;= 1.56 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on combustion of 0.0015% sulfur distillate fuel oil, AP-42 emission factor (0.001515 lb/MMBtu) and heat input of 1032 MMBtu/hr.</p> <p>Since the Permittee will continue to combust any 0.0044% sulfur distillate fuel oil that remains in the fuel storage tanks and this remaining fuel may mix with the ULSD fuel, creating a fuel mixture with an aggregate sulfur content higher than 0.0015%, this requirement does not apply until fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in both of the fuel tanks is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the fuel tanks has dropped to 0.0015%, this permit requirement replaces the 0.0044% sulfur fuel oil based SO2 emission limit, above, as the effective hourly SO2 emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
15	TSP <= 12 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
16	PM-10 (Total) <= 16 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
17	PM-2.5 (Total) <= 16 lb/hr. Maximum emission rate while combusting distillate fuel oil during the ozone season. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
18	Sulfur Content in Fuel <= 0.8 % by weight. No owner or operator subject to the provisions of this subpart shall burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). [40 CFR 60.333(b)]	Other: Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.334(h) and 60.335. A minimum of three fuel samples shall be collected during the performance test. [40 CFR 60.335].	None.	None.
19	The owner or operator shall monitor the total sulfur content of the fuel being fired in the turbine if the fuel fired in the turbine does not meet the definition of natural gas as provided in 40 CFR 60.331(u). The owner or operator shall use the methods specified in 40 CFR 60.335(b)10. The analyses 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 60.334(h)(1)]	Monitored by grab sampling at the approved frequency. Sulfur content values shall be determined on each occasion that fuel is transferred to the storage tank from any other source. If a custom fuel monitoring schedule has previously been approved, the owner or operator may continue monitoring on this schedule without submitting a special petition to the Administrator. [40 CFR 60.334(i)]	Recordkeeping by certified lab analysis results at the approved frequency. The owner or operator shall record the results of each analysis for fuel sulfur content. [40 CFR 60.334(i)]	None.
20	The owner or operator may elect not to monitor nitrogen content of the fuel being fired in the turbine if the owner or operator does not claim an allowance for fuel bound nitrogen. [40 CFR 60.334(h)(2)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator does not claim an allowance for fuel bound nitrogen. The allowable NOx emission concentration included in this permit was calculated in accordance with 40 CFR 60.332(a). In calculations, NOx emission allowance (F-value) of zero was accepted. [40 CFR 60.334(h)(2)]

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**Emission Unit:** U1 Combustion Turbine

**Operating Scenario:** OS3 ULSD Fired Turbine Operating During the Non-Ozone Season

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	This Operating Scenario shall only apply to fuel oil combustion in unit 1, during the non-ozone season (October 1 through April 30). [N.J.A.C. 7:27-22.16(o)]	None.	None.	None.
2	<p>This turbine shall not combust ULSD during any High Electric Demand Day (HEDD), as defined below, unless combusting natural gas is not possible due to gas curtailment. If this turbine combusts ULSD on an HEDD due to natural gas curtailment, the NOx emissions shall comply with the ULSD emission limit of 1.6 lb/MWhr.</p> <p>"High electric demand day" or "HEDD" means the day following a day in which the next day forecast load is estimated to have a peak value of 52,000 megawatts or higher as predicted by the PJM Interconnection 0815 update to its Mid Atlantic Region Hour Ending Integrated Forecast Load, available from PJM Interconnection at <a href="http://oasis.pjm.com/doc/projload.txt">http://oasis.pjm.com/doc/projload.txt</a>. N.J.A.C. 7:27-19(g)2 and [N.J.A.C. 7:27-22.16(a)]</p>	<p>Other: Identify each HEDD, pursuant to the definition in the applicable requirement. Ensure that ULSD is not combusted during an HEDD, unless combusting natural gas is not possible due to gas curtailment. [N.J.A.C. 7:27-22.16(o)].</p>	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. Maintain a record of all HEDDs, pursuant to the definition in the applicable requirement. If ULSD is combusted during an HEDD due to natural gas curtailment, maintain a record from the gas supplier / transporter that natural gas was curtailed during the period while ULSD was combusted. [N.J.A.C. 7:27-22.16(o)]</p>	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	<p>Opacity &lt;= 20 %. Visible emissions from stationary combustion turbines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27- 3.5]</p>	<p>Opacity: Monitored by visual determination at the approved frequency. Visual Determination in Accordance with N.J.A.C. 7:27B-2 shall be conducted by a certified smoke reader once every 100 hours of oil firing operation.</p> <p>Monitoring and recordkeeping may occur at a lesser frequency if circumstances prohibit conducting a visual determination (e.g., nighttime operation, weather conditions, unplanned dispatching, etc.) within the 100 hour timeframe. However, in no case shall the interval between visual determinations exceed 125 hours of oil firing operation. If the visual observation occurs at a lesser frequency than every 100 hours of oil firing operation, the reason for monitoring at the lesser frequency shall also be recorded.</p> <p>Installation and operation of a continuous opacity monitor on a given turbine is required if actual distillate oil operation exceeds 500 hours in a calendar year. [N.J.A.C. 7:27-22.16(e)]</p>	<p>Opacity: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event (See Monitoring Requirement). The records should be kept in a permanent form suitable for inspections. [N.J.A.C. 7:27-22.16(e)]</p>	<p>If actual distillate oil operation exceeds 500 hours in any calendar year, submit a monitoring protocol, pursuant to N.J.A.C.7:27-22.18(a), to the Emission Measurement Section, within 90 days of exceeding the 500 hour threshold. Installation and operation of the monitor is required within 180 days of exceeding the 500-hour threshold. Refer to N.J.A.C.7:27-22.18 and 19 for other applicable requirements.</p> <p>If a COMs is installed, 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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.19(d)3]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
4	<p>Opacity &lt;= 10 %. Visible emissions from stationary combustion turbines shall not exceed 10% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds.</p> <p>NOTE: This limitation applies when combusting fuel oil with a fuel sulfur content of 15 ppmw or less. This limit does not apply until the aggregate sulfur content of the fuel oil in the fuel storage tanks drops to 15 ppmw. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Opacity: Monitored by visual determination at the approved frequency. Visual Determination in Accordance with N.J.A.C. 7:27B-2 shall be conducted by a certified smoke reader once every 100 hours of oil firing operation.</p> <p>Monitoring and recordkeeping may occur at a lesser frequency if circumstances prohibit conducting a visual determination (e.g., nighttime operation, weather conditions, unplanned dispatching, etc.) within the 100 hour timeframe. However, in no case shall the interval between visual determinations exceed 125 hours of oil firing operation. If the visual observation occurs at a lesser frequency than every 100 hours of oil firing operation, the reason for monitoring at the lesser frequency shall also be recorded.</p> <p>Installation and operation of a continuous opacity monitor on a given turbine is required if actual distillate oil operation exceeds 500 hours in a calendar year. [N.J.A.C. 7:27-22.16(e)]</p>	<p>Opacity: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event (See Monitoring Requirement). The records should be kept in a permanent form suitable for inspections. [N.J.A.C. 7:27-22.16(e)]</p>	<p>If actual distillate oil operation exceeds 500 hours in any calendar year, submit a monitoring protocol, pursuant to N.J.A.C.7:27-22.18(a), to the Emission Measurement Section, within 90 days of exceeding the 500 hour threshold. Installation and operation of the monitor is required within 180 days of exceeding the 500-hour threshold. Refer to N.J.A.C.7:27-22.18 and 19 for other applicable requirements.</p> <p>If a COMs is installed, 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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.19(d)3]</p>
5	<p>Particulate Emissions &lt;= 121 lb/hr. Particulate emission limit from the combustion of distillate oil based on rated heat input of 1214.7 MMBtu/hr. [N.J.A.C. 7:27- 4.2(a)]</p>	None.	None.	None.
6	<p>Sulfur Content in Fuel &lt;= 15 ppmw (0.0015 % by weight). Maximum allowable sulfur content in No. 2 and lighter fuel oil. [N.J.A.C. 7:27- 9.2(b)]</p>	<p>Sulfur Content in Fuel: Monitored by review of fuel delivery records per delivery. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Sulfur Content in Fuel: Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(o)]</p>	None.
7	<p>Fuel stored in New Jersey that met the applicable maximum sulfur content standard of Tables 1A or 1B of N.J.A.C. 7:27-9.2 at the time it was stored in New Jersey may be used in New Jersey after the operative date of the applicable standard in 1B. [N.J.A.C. 7:27- 9.2(b)]</p>	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
8	Sulfur Content in Fuel $\leq$ 0.0044 % by weight. Maximum allowable sulfur content in fuel oil, based on February 14, 2018 sampling of fuel tank. [N.J.A.C. 7:27-22.16(a)]	Sulfur Content in Fuel: Monitored by review of fuel delivery records per delivery. [N.J.A.C. 7:27-22.16(e)]	Sulfur Content in Fuel: Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(e)]	None.
9	NOx (Total) $\leq$ 1.6 lb/MW-hr. NOx RACT emission limit applies during all periods of distillate fuel oil combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	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 "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(o)]
10	NOx (Total) $\leq$ 1.6 lb/MW-hr. NOx RACT emission limit applies during all periods of distillate fuel oil combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	NOx (Total): Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NOx (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
11	Turbine fuel limited to distillate fuel oil. Sulfur content of the distillate fuel oil must comply with all requirements in this permit. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing materials delivered. [N.J.A.C. 7:27-22.16(o)]	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
12	<p>Maximum Gross Heat Input <math>\leq</math> 1,214.7 MMBTU/hr (HHV). Maximum heat input for the turbine (U1), during non-ozone season distillate fuel oil combustion. This value comes from the ambient temperature -vs- heat input curve (Appendix III) and is based on turbine operation with water injection at 0 degrees Fahrenheit.</p> <p>The actual heat input value for any given period of operation shall be determined by the ambient temperature -vs- heat input curve (Appendix III) and shall not exceed the heat input for the actual temperature during that period of operation. However, under no circumstances shall the heat input exceed 1214.7 MMBtu/hr.</p> <p>NOTE: This limit applies only during non-ozone season (October 1 through April 30) combustion of distillate fuel oil. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously and ambient temperature reading hourly.</p> <p>The system that controls the unit shall maintain the operational heat input along the heat input curve (Appendix III). [N.J.A.C. 7:27-22.16(o)]</p>	<p>Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. And electronic logging of ambient temperature each hour during operation. [N.J.A.C. 7:27-22.16(o)]</p>	<p>None.</p>
13	<p>NOx (Total) <math>\leq</math> 50 ppmvd @ 15% O2. Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]</p>	<p>NOx (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]</p>	<p>NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]</p>	<p>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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]</p>

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14	NO <sub>x</sub> (Total) <= 50 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NO <sub>x</sub> (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
15	NO <sub>x</sub> (Total) <= 0.2 lb/MMBTU. Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
16	NO <sub>x</sub> (Total) <= 0.2 lb/MMBTU. Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NO <sub>x</sub> (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
17	NOx (Total) <= 154 lb/hr. Maximum emission rate while combusting distillate fuel oil. Based on NOx RACT emission limit (1.6 lb/MWhr) and maximum electrical output (96 MW) from the turbine. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
18	NOx (Total) <= 154 lb/hr. Maximum emission rate while combusting distillate fuel oil. Based on NOx RACT emission limit (1.6 lb/MWhr) and maximum electrical output (96 MW) from the turbine. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
19	CO <= 50 ppmvd @ 15% O2. Maximum emission rate while combusting distillate fuel oil. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
20	CO <= 50 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
21	CO <= 138 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on emission rate of 0.1134 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input of the turbine (1214.7 IMMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	CO: Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
22	CO <= 138 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on emission rate of 0.1134 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input of the turbine (1214.7 IMMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	CO: Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
23	VOC (Total) <= 50 ppmvd @ 15% O <sub>2</sub> . This limit includes formaldehyde emissions. Maximum emission rate while combusting distillate fuel oil. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
24	<p>VOC (Total) &lt;= 17.6 lb/hr. This limit includes formaldehyde emissions. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on emission rate of 0.0145 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input of the turbine (1214.7 MMBtu/hr). [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.
25	<p>SO2 &lt;= 5.4 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on combustion of 0.0044% sulfur distillate fuel oil, AP-42 emission factor (004444 lb/MMBtu) and heat input of 1214.7 MMBtu/hr.</p> <p>This emission limit is based on combustion of 0.0044% sulfur distillate oil and applies only until fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in both of the fuel tanks is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the fuel tanks has dropped to 0.0015%, the 0.0015% sulfur fuel oil based SO2 emission limit below replaces this permit requirement as the effective hourly SO2 emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.

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26	<p>SO2 &lt;= 1.84 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on combustion of 0.0015% sulfur distillate fuel oil, AP-42 emission factor (001515 lb/MMBtu) and heat input of 1214.7 MMBtu/hr.</p> <p>Since the Permittee will continue to combust any 0.0044% sulfur distillate fuel oil that remains in the fuel storage tanks and this remaining fuel may mix with the ULSD fuel, creating a fuel mixture with an aggregate sulfur content higher than 0.0015%, this requirement does not apply until fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in both of the fuel tanks is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the fuel tanks has dropped to 0.0015%, this permit requirement replaces the 0.0044% sulfur fuel oil based SO2 emission limit, above, as the effective hourly SO2 emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.
27	<p>TSP &lt;= 14.1 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on emission rate of 0.0116 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input (1214.7 MMBtu/hr). [N.J.A.C. 7:27-22.16(a)]</p>	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
28	PM-10 (Total) <= 18.8 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on emission rate of 0.0155 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input (1214.7 MMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
29	PM-2.5 (Total) <= 18.8 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
30	Methane <= 8.03 lb/hr. Based on permitted maximum heat input of 1214.7 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 3.0 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Methane: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
31	Nitrous oxide <= 1.61 lb/hr. Based on permitted maximum heat input of 1214.7 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 0.6 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Nitrous oxide: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
32	Arsenic Emissions <= 0.0134 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (1.1E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Arsenic Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
33	Benzene <= 0.0668 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (5.5E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Benzene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.

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34	Beryllium Emissions $\leq$ 0.000377 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (3.1E-7 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Beryllium Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
35	Butadiene (1,3-) $\leq$ 0.0194 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (1.6E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Butadiene (1,3-): Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
36	Cadmium Emissions $\leq$ 0.00583 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (4.8E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Cadmium Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
37	Formaldehyde $\leq$ 0.34 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (2.8E-4 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Formaldehyde: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
38	Pb $\leq$ 0.017 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (1.4E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Pb: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
39	Manganese Emissions $\leq$ 0.96 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (7.9E-4 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Manganese Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.

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40	Naphthalene $\leq$ 0.0425 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (3.5E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Naphthalene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
41	Nickel Emissions $\leq$ 0.00559 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (4.6E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Nickel Emissions: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
42	Polynuclear aromatic hydrocarbons (PAHs) $\leq$ 0.0486 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (4.0E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Polynuclear aromatic hydrocarbons (PAHs): Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
43	Any individual hazardous air pollutant emissions, not specifically listed in this permit, are below the reporting thresholds listed in N.J.A.C. 7:27-17. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
44	Sulfur Content in Fuel $\leq$ 0.8 % by weight. No owner or operator subject to the provisions of this subpart shall burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). [40 CFR 60.333(b)]	Other: Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.334(h) and 60.335. A minimum of three fuel samples shall be collected during the performance test. [40 CFR 60.335].	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
45	The owner or operator shall monitor the total sulfur content of the fuel being fired in the turbine if the fuel fired in the turbine does not meet the definition of natural gas as provided in 40 CFR 60.331(u). The owner or operator shall use the methods specified in 40 CFR 60.335(b)10. The analyses 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 60.334(h)(1)]	Monitored by grab sampling at the approved frequency. Sulfur content values shall be determined on each occasion that fuel is transferred to the storage tank from any other source. If a custom fuel monitoring schedule has previously been approved, the owner or operator may continue monitoring on this schedule without submitting a special petition to the Administrator. [40 CFR 60.334(i)]	Recordkeeping by certified lab analysis results at the approved frequency. The owner or operator shall record the results of each analysis for fuel sulfur content. [40 CFR 60.334(i)]	None.
46	The owner or operator may elect not to monitor nitrogen content of the fuel being fired in the turbine if the owner or operator does not claim an allowance for fuel bound nitrogen. [40 CFR 60.334(h)(2)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator does not claim an allowance for fuel bound nitrogen. The allowable NOx emission concentration included in this permit was calculated in accordance with 40 CFR 60.332(a). In calculations, NOx emission allowance (F-value) of zero was accepted. [40 CFR 60.334(h)(2)]

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**Emission Unit:** U1 Combustion Turbine

**Operating Scenario:** OS4 ULSD Fired Turbine - Start-up and Shut Down During the Non-Ozone Season

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	<p>Start-up Period &lt;= 30 minutes.</p> <p>Startup commences with initiation of the combustion of fuel in the combustion turbine and concludes when the turbine reaches steady state operation at 80% - 100% of design capacity, or when combustion is ceased prior to attaining steady state operation (for instance, if start-up is abandoned due to equipment malfunction).</p> <p>The duration of start-up shall not exceed 30 minutes. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Start-up Period: Monitored by hour/time monitor upon occurrence of event and by load meter upon occurrence of event.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Start-up Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. Records shall show:</p> <ol style="list-style-type: none"> <li>1) Start-up start time;</li> <li>2) Start-up end time</li> <li>3) Date</li> <li>4) Total start-up duration; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>[N.J.A.C. 7:27-22.16(o)]</p>	None.
2	<p>Shutdown Period &lt;= 30 minutes.</p> <p>Shutdown commences with initiation of lowering turbine power output below 80% of base load, with the intent to cease generation of electrical power output, and concludes with the cessation of the combustion turbine operation.</p> <p>The duration of shut down, shall not exceed 30 minutes.</p> <p>Nothing in this condition shall preclude the continuous operation of the turbine at a load range below 80% of the base load provided, during stack tests, the turbine exhibits compliance with all applicable emission limits at that load range. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Shutdown Period: Monitored by hour/time monitor upon occurrence of event and by load meter upon occurrence of event.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Shutdown Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. Records shall show:</p> <ol style="list-style-type: none"> <li>1) Shut down start time;</li> <li>2) Shut down end time</li> <li>3) Date</li> <li>4) Total shut down duration; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>[N.J.A.C. 7:27-22.16(o)]</p>	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	Opacity <= 20 %. Visible emissions from stationary combustion turbines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27- 3.5]	<p>Opacity: Monitored by visual determination at the approved frequency. Visual Determination in Accordance with N.J.A.C. 7:27B-2 shall be conducted by a certified smoke reader once every 100 hours of oil firing operation.</p> <p>Monitoring and recordkeeping may occur at a lesser frequency if circumstances prohibit conducting a visual determination (e.g., nighttime operation, weather conditions, unplanned dispatching, etc.) within the 100 hour timeframe. However, in no case shall the interval between visual determinations exceed 125 hours of oil firing operation. If the visual observation occurs at a lesser frequency than every 100 hours of oil firing operation, the reason for monitoring at the lesser frequency shall also be recorded.</p> <p>Installation and operation of a continuous opacity monitor on a given turbine is required if actual distillate oil operation exceeds 500 hours in a calendar year. [N.J.A.C. 7:27-22.16(o)]</p>	Opacity: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event (See Monitoring Requirement). The records should be kept in a permanent form suitable for inspections. [N.J.A.C. 7:27-22.16(o)]	<p>If actual distillate oil operation exceeds 500 hours in any calendar year, submit a monitoring protocol, pursuant to N.J.A.C.7:27-22.18(a), to the Emission Measurement Section (EMS), within 90 days of exceeding the 500 hour threshold. Installation and operation of the monitor is required within 180 days of exceeding the 500-hour threshold. Refer to N.J.A.C.7:27-22.18 and 19 for other applicable requirements.</p> <p>If a COMs is installed, 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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal. [N.J.A.C. 7:27-22.19(d)3]</p>
4	Particulate Emissions <= 121 lb/hr. Particulate emission limit from the combustion of distillate oil based on rated heat input of 1214.7 MMBtu/hr. [N.J.A.C. 7:27- 4.2(a)]	None.	None.	None.
5	Sulfur Content in Fuel <= 15 ppmw (0.0015 % by weight). Maximum allowable sulfur content in No. 2 and lighter fuel oil. [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 / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(o)]	None.
6	Fuel stored in New Jersey that met the applicable maximum sulfur content standard of Tables 1A or 1B of N.J.A.C. 7:27-9.2 at the time it was stored in New Jersey may be used in New Jersey after the operative date of the applicable standard in 1B. [N.J.A.C. 7:27- 9.2(b)]	None.	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
7	Sulfur Content in Fuel <= 0.0044 % by weight. Maximum allowable sulfur content in fuel oil, based on February 14, 2018 sampling of fuel tank. [N.J.A.C. 7:27-22.16(a)]	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 / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(o)]	None.
8	Turbine fuel limited to distillate fuel oil. Sulfur content of the distillate fuel oil must comply with all requirements in this permit. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing materials delivered. [N.J.A.C. 7:27-22.16(o)]	None.
9	<p>Maximum Gross Heat Input &lt;= 1,214.7 MMBTU/hr (HHV). Maximum heat input for the turbine (U1), during non-ozone season distillate fuel oil combustion. This value comes from the ambient temperature -vs- heat input curve (Appendix III) and is based on turbine operation with water injection at 0 degrees Fahrenheit.</p> <p>The actual heat input value for any given period of operation shall be determined by the ambient temperature -vs- heat input curve (Appendix III) and shall not exceed the heat input for the actual temperature during that period of operation. However, under no circumstances shall the heat input exceed 1214.7 MMBtu/hr.</p> <p>NOTE: This limit applies only during non-ozone season (October 1 through April 30) combustion of distillate fuel oil. [N.J.A.C. 7:27-22.16(a)]</p>	Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously. [N.J.A.C. 7:27-22.16(o)]	Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. [N.J.A.C. 7:27-22.16(o)]	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
10	NO <sub>x</sub> (Total) ≤ 1.6 lb/MW-hr. NO <sub>x</sub> RACT emission limit applies during all periods of distillate fuel oil combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	NO <sub>x</sub> (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 "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NO <sub>x</sub> (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]
11	CO ≤ 250 ppmvd @ 15% O <sub>2</sub> . VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(b)]	CO: Monitored by continuous emission monitoring system continuously, based on one calendar day not including periods of equipment downtime. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-16.23(a)1]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]
12	VOC (Total) ≤ 50 ppmvd @ 15% O <sub>2</sub> . VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(c)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions. [N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
13	<p>SO2 &lt;= 5.4 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on combustion of 0.0044% sulfur distillate fuel oil, AP-42 emission factor (004444 lb/MMBtu) and heat input of 1214.7 MMBtu/hr.</p> <p>This emission limit is based on combustion of 0.0044% sulfur distillate oil and applies only until fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in both of the fuel tanks is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the fuel tanks has dropped to 0.0015%, the 0.0015% sulfur fuel oil based SO2 emission limit below replaces this permit requirement as the effective hourly SO2 emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
14	<p>SO<sub>2</sub> ≤ 1.84 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on combustion of 0.0015% sulfur distillate fuel oil, AP-42 emission factor (001515 lb/MMBtu) and heat input of 1214.7 MMBtu/hr.</p> <p>Since the Permittee will continue to combust any 0.0044% sulfur distillate fuel oil that remains in the fuel storage tanks and this remaining fuel may mix with the ULSD fuel, creating a fuel mixture with an aggregate sulfur content higher than 0.0015%, this requirement does not apply until fuel tank sampling (see "Fuel Tank Sulfur Content Sampling" in IS7) demonstrates that the aggregate sulfur content of the fuel in both of the fuel tanks is no more than 0.0015%.</p> <p>Once fuel tank sampling demonstrates that the aggregate sulfur content of the fuel oil stored in both of the fuel tanks has dropped to 0.0015%, this permit requirement replaces the 0.0044% sulfur fuel oil based SO<sub>2</sub> emission limit, above, as the effective hourly SO<sub>2</sub> emission limit for the turbine (U1). [N.J.A.C. 7:27-22.16(a)]</p>	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
15	TSP ≤ 14.1 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
16	PM-10 (Total) ≤ 18.8 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
17	PM-2.5 (Total) <= 18.8 lb/hr. Maximum emission rate while combusting distillate fuel oil during the non-ozone season. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
18	Sulfur Content in Fuel <= 0.8 % by weight. No owner or operator subject to the provisions of this subpart shall burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). [40 CFR 60.333(b)]	Other: Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.334(h) and 60.335. A minimum of three fuel samples shall be collected during the performance test. [40 CFR 60.335].	None.	None.
19	The owner or operator shall monitor the total sulfur content of the fuel being fired in the turbine if the fuel fired in the turbine does not meet the definition of natural gas as provided in 40 CFR 60.331(u). The owner or operator shall use the methods specified in 40 CFR 60.335(b)10. The analyses 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 60.334(h)(1)]	Monitored by grab sampling at the approved frequency. Sulfur content values shall be determined on each occasion that fuel is transferred to the storage tank from any other source. If a custom fuel monitoring schedule has previously been approved, the owner or operator may continue monitoring on this schedule without submitting a special petition to the Administrator. [40 CFR 60.334(i)]	Recordkeeping by certified lab analysis results at the approved frequency. The owner or operator shall record the results of each analysis for fuel sulfur content. [40 CFR 60.334(i)]	None.
20	The owner or operator may elect not to monitor nitrogen content of the fuel being fired in the turbine if the owner or operator does not claim an allowance for fuel bound nitrogen. [40 CFR 60.334(h)(2)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator does not claim an allowance for fuel bound nitrogen. The allowable NOx emission concentration included in this permit was calculated in accordance with 40 CFR 60.332(a). In calculations, NOx emission allowance (F-value) of zero was accepted. [40 CFR 60.334(h)(2)]

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**Emission Unit:** U1 Combustion Turbine**Operating Scenario:** OS5 Natural Gas Fired Turbine Operating During the Ozone Season

<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
1	This Operating Scenario shall only apply to natural gas combustion in unit 1, during the ozone season (May 1 through September 30). [N.J.A.C. 7:27-22.16(o)]	None.	None.	None.
2	Opacity <= 20 %. Visible emissions from stationary combustion turbines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27- 3.5]	None.	None.	None.
3	Opacity <= 10 %. Visible emissions from stationary combustion turbines shall not exceed 10% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
4	Particulate Emissions <= 103 lb/hr. Particulate emission limit from the combustion of natural gas based on rated heat input of 1032 MMBtu/hr. [N.J.A.C. 7:27- 4.2(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
5	NOx (Total) <= 1 lb/MW-hr. NOx RACT emission limit applies during all periods of natural gas combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	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 "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(o)]
6	NOx (Total) <= 1 lb/MW-hr. NOx RACT emission limit applies during all periods of natural gas combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
7	Turbine fuel limited to natural gas. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing materials delivered. [N.J.A.C. 7:27-22.16(o)]	None.
8	Maximum Gross Heat Input <= 1,032 MMBTU/hr (HHV). Maximum heat input for the turbine (U1), during ozone season natural gas combustion. [N.J.A.C. 7:27-22.16(e)]	Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously. [N.J.A.C. 7:27-22.16(e)]	Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. [N.J.A.C. 7:27-22.16(o)]	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
9	NO <sub>x</sub> (Total) <= 25 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
10	NO <sub>x</sub> (Total) <= 25 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NO <sub>x</sub> (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
11	NO <sub>x</sub> (Total) <= 0.1 lb/MMBTU. Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
12	NOx (Total) <= 0.1 lb/MMBTU. Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
13	NOx (Total) <= 96 lb/hr. Maximum emission rate while combusting natural gas. Based on NOx RACT emission limit (1.0 lb/MWhr) and maximum electrical output (96 MW) from the turbine. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
14	NOx (Total) <= 96 lb/hr. Maximum emission rate while combusting natural gas. Based on NOx RACT emission limit (1.0 lb/MWhr) and maximum electrical output (96 MW) from the turbine. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
15	CO <= 50 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting natural gas. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
16	CO <= 50 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
17	CO <= 117 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
18	CO ≤ 117 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
19	VOC (Total) ≤ 50 ppmvd @ 15% O <sub>2</sub> . This limit includes formaldehyde emissions. Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
20	VOC (Total) ≤ 15 lb/hr. This limit includes formaldehyde emissions. Maximum emission rate while combusting natural gas during the ozone season. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
21	SO <sub>2</sub> ≤ 0.6 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
22	TSP ≤ 5 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
23	PM-10 (Total) ≤ 11 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. [N.J.A.C. 7:27-22.16(a)]	PM-10 (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	PM-10 (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
24	PM-2.5 (Total) ≤ 11 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	PM-2.5 (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	PM-2.5 (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
25	Methane ≤ 2.27 lb/hr. Based on permitted maximum heat input of 1032 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 1.0 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Methane: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request. [N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
26	Nitrous oxide $\leq$ 0.23 lb/hr. Based on permitted maximum heat input of 1032 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 0.1 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Nitrous oxide: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
27	Acetaldehyde $\leq$ 0.0413 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (4.0E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Acetaldehyde: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
28	Acrolein $\leq$ 0.0066 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (6.4E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Acrolein: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
29	Benzene $\leq$ 0.0124 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (1.2E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Benzene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
30	Ethylbenzene $\leq$ 0.033 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (3.2E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Ethylbenzene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
31	Formaldehyde $\leq$ 0.733 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (7.10E-4 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Formaldehyde: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
32	Naphthalene $\leq$ 0.00134 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (1.3E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Naphthalene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
33	Polynuclear aromatic hydrocarbons (PAHs) $\leq$ 0.00227 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (2.2E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Polynuclear aromatic hydrocarbons (PAHs): Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
34	Propylene oxide $\leq$ 0.0299 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on maximum heat input (1032 MMBtu/hr) and AP-42 emission factor (2.9E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Propylene oxide: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
35	Any individual hazardous air pollutant emissions, not specifically listed in this permit, are below the reporting thresholds listed in N.J.A.C. 7:27-17. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
36	<p>Sulfur Content in Fuel &lt;= 0.8 % by weight. No owner or operator subject to the provisions of this subpart shall burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). [40 CFR 60.333(b)]</p>	<p>Other: Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.334(h) and 60.335. A minimum of three fuel samples shall be collected during the performance test.</p> <p>Custom schedule: Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved lternative method. Effective September 6, 2001, sulfur monitoring shall be conducted as follows:</p> <p>a: The sulfur content of the natural gas shall be analyzed and recorded bi - monthly, for the first 6 months.</p> <p>b: Should this monitoring show little variability in the fuel sulfur content and indicates consistant compliance with 40 CFR 60.333, then quarterly monitoring will be allowed for the next 2 quarters.</p> <p>c: Should this monitoring show little variability in the fuel sulfur content and indicates consistant compliance with 40 CFR 60.333, then semi-annual monitoring will be allowed. This semi-anual monitoring shall be conducted during the first and third quarters of each calendar year.</p> <p>Should any fuel sulfur monitoring indicate noncompliance with 40 CFR 60.333, the fuel sulfur content monitoring shall be conducted weekly during the interim period while the custom schedule is being reexamined by the EPA.[40 CFR 60.335].</p>	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
37	The owner or operator may elect not to monitor nitrogen content of the fuel being fired in the turbine if the owner or operator does not claim an allowance for fuel bound nitrogen. [40 CFR 60.334(h)(2)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator does not claim an allowance for fuel bound nitrogen. The allowable NOx emission concentration included in this permit was calculated in accordance with 40 CFR 60.332(a). In calculations, NOx emission allowance (F-value) of zero was accepted. [40 CFR 60.334(h)(2)]
38	The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u) regardless of whether an existing custom schedule approved by the Administrator. [40 CFR 60.334(h)(3)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator shall submit the required determination to the Administrator using the sources of information described in 40 CFR 60.334(h)(3)(i) or (ii) showing the maximum total sulfur content. [40 CFR 60.334(h)(3)]

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**Emission Unit:** U1 Combustion Turbine

**Operating Scenario:** OS6 Natural Gas Fired Turbine - Start up and Shut Down During the Ozone Season

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	<p>Start-up Period &lt;= 30 minutes.</p> <p>Startup commences with initiation of the combustion of fuel in the combustion turbine and concludes when the turbine reaches steady state operation at 80% - 100% of design capacity, or when combustion is ceased prior to attaining steady state operation (for instance, if start-up is abandoned due to equipment malfunction).</p> <p>The duration of start-up shall not exceed 30 minutes. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Start-up Period: Monitored by hour/time monitor upon occurrence of event and by load meter upon occurrence of event.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Start-up Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. Records shall show:</p> <ol style="list-style-type: none"> <li>1) Start-up start time;</li> <li>2) Start-up end time</li> <li>3) Date</li> <li>4) Total start-up duration; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>[N.J.A.C. 7:27-22.16(o)]</p>	None.
2	<p>Shutdown Period &lt;= 30 minutes.</p> <p>Shutdown commences with initiation of lowering turbine power output below 80% of base load, with the intent to cease generation of electrical power output, and concludes with the cessation of the combustion turbine operation.</p> <p>The duration of shut down, shall not exceed 30 minutes.</p> <p>Nothing in this condition shall preclude the continuous operation of the turbine at a load range below 80% of the base load provided, during stack tests, the turbine exhibits compliance with all applicable emission limits at that load range. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Shutdown Period: Monitored by hour/time monitor upon occurrence of event and by load meter upon occurrence of event.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Shutdown Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. Records shall show:</p> <ol style="list-style-type: none"> <li>1) Shut down start time;</li> <li>2) Shut down end time</li> <li>3) Date</li> <li>4) Total shut down duration; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>[N.J.A.C. 7:27-22.16(o)]</p>	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	Opacity <= 20 %. Visible emissions from stationary combustion turbines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27- 3.5]	None.	None.	None.
4	Particulate Emissions <= 103 lb/hr. Particulate emission limit from the combustion of natural gas based on rated heat input of 1032 MMBtu/hr. [N.J.A.C. 7:27- 4.2(a)]	None.	None.	None.
5	Turbine fuel limited to natural gas. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing materials delivered. [N.J.A.C. 7:27-22.16(o)]	None.
6	Maximum Gross Heat Input <= 1,032 MMBTU/hr (HHV). Maximum heat input for the turbine (U1), during ozone season natural gas combustion. [N.J.A.C. 7:27-22.16(a)]	Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously. [N.J.A.C. 7:27-22.16(o)]	Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. [N.J.A.C. 7:27-22.16(o)]	None.
7	NOx (Total) <= 1 lb/MW-hr. NOx RACT emission limit applies during all periods of natural gas combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	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 "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
8	CO <= 250 ppmvd @ 15% O <sub>2</sub> . VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(b)]	CO: Monitored by continuous emission monitoring system continuously, based on one calendar day not including periods of equipment downtime. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-16.23(a)1]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]
9	VOC (Total) <= 50 ppmvd @ 15% O <sub>2</sub> . VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(c)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
10	SO <sub>2</sub> <= 0.6 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
11	TSP <= 5 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
12	PM-10 (Total) <= 11 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
13	PM-2.5 (Total) <= 11 lb/hr. Maximum emission rate while combusting natural gas during the ozone season. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
14	<p>Sulfur Content in Fuel &lt;= 0.8 % by weight. No owner or operator subject to the provisions of this subpart shall burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). [40 CFR 60.333(b)]</p>	<p>Other: Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.334(h) and 60.335. A minimum of three fuel samples shall be collected during the performance test.</p> <p>Custom schedule: Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved lternative method. Effective September 6, 2001, sulfur monitoring shall be conducted as follows:</p> <p>a: The sulfur content of the natural gas shall be analyzed and recorded bi - monthly, for the first 6 months.</p> <p>b: Should this monitoring show little variability in the fuel sulfur content and indicates consistant compliance with 40 CFR 60.333, then quarterly monitoring will be allowed for the next 2 quarters.</p> <p>c: Should this monitoring show little variability in the fuel sulfur content and indicates consistant compliance with 40 CFR 60.333, then semi-annual monitoring will be allowed. This semi-anual monitoring shall be conducted during the first and third quarters of each calendar year.</p> <p>Should any fuel sulfur monitoring indicate noncompliance with 40 CFR 60.333, the fuel sulfur content monitoring shall be conducted weekly during the interim period while the custom schedule is being reexamined by the EPA..[40 CFR 60.335].</p>	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
15	The owner or operator may elect not to monitor nitrogen content of the fuel being fired in the turbine if the owner or operator does not claim an allowance for fuel bound nitrogen. [40 CFR 60.334(h)(2)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator does not claim an allowance for fuel bound nitrogen. The allowable NOx emission concentration included in this permit was calculated in accordance with 40 CFR 60.332(a). In calculations, NOx emission allowance (F-value) of zero was accepted. [40 CFR 60.334(h)(2)]
16	The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u) regardless of whether an existing custom schedule approved by the Administrator. [40 CFR 60.334(h)(3)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator shall submit the required determination to the Administrator using the sources of information described in 40 CFR 60.334(h)(3)(i) or (ii) showing the maximum total sulfur content. [40 CFR 60.334(h)(3)]

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**Emission Unit:** U1 Combustion Turbine**Operating Scenario:** OS7 Natural Gas Fired Turbine Operating During the Non-Ozone Season

<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
1	This Operating Scenario shall only apply to natural gas combustion in unit 1, during the non-ozone season (October 1 through April 30). [N.J.A.C. 7:27-22.16(o)]	None.	None.	None.
2	Opacity <= 20 %. Visible emissions from stationary combustion turbines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27- 3.5]	None.	None.	None.
3	Opacity <= 10 %. Visible emissions from stationary combustion turbines shall not exceed 10% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
4	Particulate Emissions <= 121 lb/hr. Particulate emission limit from the combustion of natural gas based on rated heat input of 1214.7 MMBtu/hr. [N.J.A.C. 7:27- 4.2(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
5	NO <sub>x</sub> (Total) ≤ 1 lb/MW-hr. NO <sub>x</sub> RACT emission limit applies during all periods of natural gas combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	NO <sub>x</sub> (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 "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NO <sub>x</sub> (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(o)]
6	NO <sub>x</sub> (Total) ≤ 1 lb/MW-hr. NO <sub>x</sub> RACT emission limit applies during all periods of natural gas combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	NO <sub>x</sub> (Total): Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NO <sub>x</sub> (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
7	Turbine fuel limited to natural gas. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing materials delivered. [N.J.A.C. 7:27-22.16(o)]	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
8	<p>Maximum Gross Heat Input <math>\leq</math> 1,214.7 MMBTU/hr (HHV). Maximum heat input for the turbine (U1), during non-ozone season natural gas combustion. This value comes from the ambient temperature -vs- heat input curve (Appendix III) and is based on turbine operation with water injection at 0 degrees Fahrenheit.</p> <p>The actual heat input value for any given period of operation shall be determined by the ambient temperature -vs- heat input curve (Appendix III) and shall not exceed the heat input for the actual temperature during that period of operation. However, under no circumstances shall the heat input exceed 1214.7 MMBtu/hr.</p> <p>NOTE: This limit applies only during non-ozone season (October 1 through April 30) combustion of natural gas. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously and ambient temperature reading hourly.</p> <p>The system that controls the unit shall maintain the operational heat input along the heat input curve (Appendix III). [N.J.A.C. 7:27-22.16(o)]</p>	<p>Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. And electronic logging of ambient temperature each hour during operation. [N.J.A.C. 7:27-22.16(o)]</p>	<p>None.</p>
9	<p>NOx (Total) <math>\leq</math> 25 ppmvd @ 15% O<sub>2</sub>. Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]</p>	<p>NOx (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]</p>	<p>NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]</p>	<p>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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]</p>

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**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
10	NO <sub>x</sub> (Total) ≤ 25 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NO <sub>x</sub> (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
11	NO <sub>x</sub> (Total) ≤ 0.1 lb/MMBTU. Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
12	NO <sub>x</sub> (Total) ≤ 0.1 lb/MMBTU. Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	NO <sub>x</sub> (Total): Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NO <sub>x</sub> (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
13	NOx (Total) <= 96 lb/hr. Maximum emission rate while combusting natural gas. Based on NOx RACT emission limit (1.0 lb/MWhr) and maximum electrical output (96 MW) from the turbine. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	NOx (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
14	NOx (Total) <= 96 lb/hr. Maximum emission rate while combusting natural gas. Based on NOx RACT emission limit (1.0 lb/MWhr) and maximum electrical output (96 MW) from the turbine. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
15	CO <= 50 ppmvd @ 15% O2. Maximum emission rate while combusting natural gas. [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. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]

U1 Combustion Turbine

OS7

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Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
16	CO <= 50 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
17	CO <= 138 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on emission rate of 0.1134 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input of the turbine (1214.7 IMMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	CO: Monitored by continuous emission monitoring system continuously, based on a 3 hour rolling average based on a 1 hour block average. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(e)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred. (See CEMS and QA/QC requirements in OS Summary). [N.J.A.C. 7:27-22.16(e)]
18	CO <= 138 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on emission rate of 0.1134 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input of the turbine (1214.7 IMMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	CO: Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING FOR NON-OZONE SEASON OPERATION" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
19	VOC (Total) <= 50 ppmvd @ 15% O <sub>2</sub> . This limit includes formaldehyde emissions. Maximum emission rate while combusting natural gas. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

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Facility Specific Requirements**

<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
20	VOC (Total) <= 17.6 lb/hr. This limit includes formaldehyde emissions. Maximum emission rate while combusting natural gas during the non-ozone season. Based on emission rate of 0.0145 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input of the turbine (1214.7 lMMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
21	SO <sub>2</sub> <= 0.73 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on emission rate of 0.0006 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input of the turbine (1214.7 MMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
22	TSP <= 5.83 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on emission rate of 0.0048 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input (1214.7 MMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
23	PM-10 (Total) <= 13 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on emission rate of 0.0107 lb/MMBtu (derived from ozone season lb/hr emission limit) and maximum permitted non-ozone season heat input (1214.7 MMBtu/hr). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
24	PM-2.5 (Total) <= 13 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on the PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
25	Methane $\leq$ 2.68 lb/hr. Based on permitted maximum heat input of 1214.7 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 1.0 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Methane: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
26	Nitrous oxide $\leq$ 0.27 lb/hr. Based on permitted maximum heat input of 1214.7 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 0.1 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Nitrous oxide: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
27	Acetaldehyde $\leq$ 0.0486 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (4.0E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Acetaldehyde: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
28	Acrolein $\leq$ 0.00777 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor factor (6.4E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Acrolein: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
29	Benzene $\leq$ 0.0146 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (1.2E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Benzene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
30	Ethylbenzene $\leq$ 0.0389 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (3.2E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Ethylbenzene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
31	Formaldehyde $\leq$ 0.862 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (7.10E-4 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Formaldehyde: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
32	Naphthalene $\leq$ 0.00158 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (1.3E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Naphthalene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
33	Polynuclear aromatic hydrocarbons (PAHs) $\leq$ 0.00267 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (2.2E-6 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Polynuclear aromatic hydrocarbons (PAHs): Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
34	Propylene oxide $\leq$ 0.0352 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on maximum heat input (1214.7 MMBtu/hr) and AP-42 emission factor (2.9E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Propylene oxide: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
35	Any individual hazardous air pollutant emissions, not specifically listed in this permit, are below the reporting thresholds listed in N.J.A.C. 7:27-17. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
36	<p>Sulfur Content in Fuel &lt;= 0.8 % by weight. No owner or operator subject to the provisions of this subpart shall burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). [40 CFR 60.333(b)]</p>	<p>Other: Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.334(h) and 60.335. A minimum of three fuel samples shall be collected during the performance test.</p> <p>Custom schedule: Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved lternative method. Effective September 6, 2001, sulfur monitoring shall be conducted as follows:</p> <p>a: The sulfur content of the natural gas shall be analyzed and recorded bi - monthly, for the first 6 months.</p> <p>b: Should this monitoring show little variability in the fuel sulfur content and indicates consistant compliance with 40 CFR 60.333, then quarterly monitoring will be allowed for the next 2 quarters.</p> <p>c: Should this monitoring show little variability in the fuel sulfur content and indicates consistant compliance with 40 CFR 60.333, then semi-annual monitoring will be allowed. This semi-anual monitoring shall be conducted during the first and third quarters of each calendar year.</p> <p>Should any fuel sulfur monitoring indicate noncompliance with 40 CFR 60.333, the fuel sulfur content monitoring shall be conducted weekly during the interim period while the custom schedule is being reexamined by the EPA.[40 CFR 60.335].</p>	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
37	The owner or operator may elect not to monitor nitrogen content of the fuel being fired in the turbine if the owner or operator does not claim an allowance for fuel bound nitrogen. [40 CFR 60.334(h)(2)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator does not claim an allowance for fuel bound nitrogen. The allowable NOx emission concentration included in this permit was calculated in accordance with 40 CFR 60.332(a). In calculations, NOx emission allowance (F-value) of zero was accepted. [40 CFR 60.334(h)(2)]
38	The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u) regardless of whether an existing custom schedule approved by the Administrator. [40 CFR 60.334(h)(3)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator shall submit the required determination to the Administrator using the sources of information described in 40 CFR 60.334(h)(3)(i) or (ii) showing the maximum total sulfur content. [40 CFR 60.334(h)(3)]

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**Emission Unit: U1 Combustion Turbine**

**Operating Scenario: OS8 Natural Gas Fired Turbine - Start-up and Shut Down During the Non-Ozone Season**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	<p>Start-up Period &lt;= 30 minutes.</p> <p>Startup commences with initiation of the combustion of fuel in the combustion turbine and concludes when the turbine reaches steady state operation at 80% - 100% of design capacity, or when combustion is ceased prior to attaining steady state operation (for instance, if start-up is abandoned due to equipment malfunction).</p> <p>The duration of start-up shall not exceed 30 minutes. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Start-up Period: Monitored by hour/time monitor upon occurrence of event and by load meter upon occurrence of event.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Start-up Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. Records shall show:</p> <ol style="list-style-type: none"> <li>1) Start-up start time;</li> <li>2) Start-up end time</li> <li>3) Date</li> <li>4) Total start-up duration; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>[N.J.A.C. 7:27-22.16(o)]</p>	None.
2	<p>Shutdown Period &lt;= 30 minutes.</p> <p>Shutdown commences with initiation of lowering turbine power output below 80% of base load, with the intent to cease generation of electrical power output, and concludes with the cessation of the combustion turbine operation.</p> <p>The duration of shut down, shall not exceed 30 minutes.</p> <p>Nothing in this condition shall preclude the continuous operation of the turbine at a load range below 80% of the base load provided, during stack tests, the turbine exhibits compliance with all applicable emission limits at that load range. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Shutdown Period: Monitored by hour/time monitor upon occurrence of event and by load meter upon occurrence of event.</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>The monitor 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)]</p>	<p>Shutdown Period: Recordkeeping by data acquisition system (DAS) / electronic data storage upon occurrence of event. Records shall show:</p> <ol style="list-style-type: none"> <li>1) Shut down start time;</li> <li>2) Shut down end time</li> <li>3) Date</li> <li>4) Total shut down duration; and</li> <li>5) Name of operator making the entry.</li> </ol> <p>[N.J.A.C. 7:27-22.16(o)]</p>	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	Opacity <= 20 %. Visible emissions from stationary combustion turbines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds. [N.J.A.C. 7:27- 3.5]	None.	None.	None.
4	Particulate Emissions <= 121 lb/hr. Particulate emission limit from the combustion of natural gas based on rated heat input of 1214.7 MMBtu/hr. [N.J.A.C. 7:27- 4.2(a)]	None.	None.	None.
5	Turbine fuel limited to natural gas. [N.J.A.C. 7:27-22.16(a)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing materials delivered. [N.J.A.C. 7:27-22.16(o)]	None.
6	<p>Maximum Gross Heat Input &lt;= 1,214.7 MMBTU/hr (HHV). Maximum heat input for the turbine (U1), during non-ozone season natural gas combustion. This value comes from the ambient temperature -vs- heat input curve (Appendix III) and is based on turbine operation with water injection at 0 degrees Fahrenheit.</p> <p>The actual heat input value for any given period of operation shall be determined by the ambient temperature -vs- heat input curve (Appendix III) and shall not exceed the heat input for the actual temperature during that period of operation. However, under no circumstances shall the heat input exceed 1214.7 MMBtu/hr.</p> <p>NOTE: This limit applies only during non-ozone season (October 1 through April 30) combustion of natural gas. [N.J.A.C. 7:27-22.16(a)]</p>	Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously. [N.J.A.C. 7:27-22.16(o)]	Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each hour during operation. [N.J.A.C. 7:27-22.16(o)]	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
7	NO <sub>x</sub> (Total) <= 1 lb/MW-hr. NO <sub>x</sub> RACT emission limit applies during all periods of natural gas combustion during which net useful energy is being produced by the turbine. [N.J.A.C. 7:27-19.5(g)1]	NO <sub>x</sub> (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 "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-19.15(a)]	NO <sub>x</sub> (Total): Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]
8	CO <= 250 ppmvd @ 15% O <sub>2</sub> . VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(b)]	CO: Monitored by continuous emission monitoring system continuously, based on one calendar day not including periods of equipment downtime. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-16.23(a)1]	CO: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. See "CEMS REQUIREMENTS SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	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 calendar quarter (the calendar quarters begin on January 1, April 1, July 1, and October 1) electronically through the NJDEP online EEMPR web portal starting with the quarter in which the Performance Specification Test was conducted, for review and approval. Quarterly EEMPR reports shall include all quarterly and annual QA data. This report shall be submitted whether or not an emission exceedance has occurred.  See CEMS and QA/QC requirements in OS Summary. [N.J.A.C. 7:27-22.19(d)]
9	VOC (Total) <= 50 ppmvd @ 15% O <sub>2</sub> . VOC RACT rule emission limit applies during all operation of the combustion turbine. [N.J.A.C. 7:27-16.9(c)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
10	SO <sub>2</sub> ≤ 0.73 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
11	TSP ≤ 5.83 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
12	PM-10 (Total) ≤ 13 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.
13	PM-2.5 (Total) ≤ 13 lb/hr. Maximum emission rate while combusting natural gas during the non-ozone season. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	None.	Other: Maintain relevant emission and operation information from turbine and control equipment manufacturers and the engineering factors used to project start-up / shut down emissions.[N.J.A.C. 7:27-22.16(o)].	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
14	<p>Sulfur Content in Fuel &lt;= 0.8 % by weight. No owner or operator subject to the provisions of this subpart shall burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). [40 CFR 60.333(b)]</p>	<p>Other: Test methods and procedures shall be consistent with the requirements of 40 CFR Part 60.334(h) and 60.335. A minimum of three fuel samples shall be collected during the performance test.</p> <p>Custom schedule: Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved lternative method. Effective September 6, 2001, sulfur monitoring shall be conducted as follows:</p> <p>a: The sulfur content of the natural gas shall be analyzed and recorded bi - monthly, for the first 6 months.</p> <p>b: Should this monitoring show little variability in the fuel sulfur content and indicates consistant compliance with 40 CFR 60.333, then quarterly monitoring will be allowed for the next 2 quarters.</p> <p>c: Should this monitoring show little variability in the fuel sulfur content and indicates consistant compliance with 40 CFR 60.333, then semi-annual monitoring will be allowed. This semi-anual monitoring shall be conducted during the first and third quarters of each calendar year.</p> <p>Should any fuel sulfur monitoring indicate noncompliance with 40 CFR 60.333, the fuel sulfur content monitoring shall be conducted weekly during the interim period while the custom schedule is being reexamined by the EPA..[40 CFR 60.335].</p>	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
15	The owner or operator may elect not to monitor nitrogen content of the fuel being fired in the turbine if the owner or operator does not claim an allowance for fuel bound nitrogen. [40 CFR 60.334(h)(2)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator does not claim an allowance for fuel bound nitrogen. The allowable NOx emission concentration included in this permit was calculated in accordance with 40 CFR 60.332(a). In calculations, NOx emission allowance (F-value) of zero was accepted. [40 CFR 60.334(h)(2)]
16	The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u) regardless of whether an existing custom schedule approved by the Administrator. [40 CFR 60.334(h)(3)]	None.	None.	Demonstrate compliance: Once initially. The owner or operator shall submit the required determination to the Administrator using the sources of information described in 40 CFR 60.334(h)(3)(i) or (ii) showing the maximum total sulfur content. [40 CFR 60.334(h)(3)]

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**Emission Unit:** U2 Gas Compressor Engine - Natural Gas Fired  
**Subject Item:** CD1 Non-Selective Catalytic Converter for Gas Compressor Engine

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	<p>The Non-Selective Catalytic Reduction system (NSCR) shall be used to reduce Nitrogen Oxides (NOx), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC) resulting from combustion in the engine, at the recommended manufacturer's operating flue gas flowrate range such that NOx (Total), CO and VOC (Total) emissions, as established in this permit, are met.</p> <p>The minimum NOx control efficiency shall be 95% (design value); the minimum CO control efficiency shall be 75% (design value) and the minimum VOC control efficiency shall be 85% (design value) during all periods of operation. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Monitored by documentation of construction upon request of the Department. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Other: The permittee shall maintain NSCR system manufacturer's documentation, specifications, operation and maintenance manual on-site.[N.J.A.C. 7:27-22.16(o)].</p>	<p>None.</p>
2	<p>The NSCR (CD1) shall be in place at all times that the engine is operating. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Other: Ensure that the NSCR (catalyst) is in place at all times.[N.J.A.C. 7:27-22.16(o)].</p>	<p>None.</p>	<p>None.</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	<p>Temperature at Catalyst Bed <math>\geq</math> 750 and Temperature at Catalyst Bed <math>\leq</math> 1,250 degrees F.</p> <p>The engine shall automatically shut down if the catalyst inlet temperature exceeds 1250 degrees F. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Temperature at Catalyst Bed: Monitored by temperature instrument continuously. The permittee shall install, calibrate and maintain an inline thermocouple in accordance with the manufacturer's specifications, to monitor the catalyst inlet temperature.</p> <p>The monitor 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)]</p>	<p>Temperature at Catalyst Bed: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. The permittee shall record the following information, in a log book or computer data system, for each instance that the catalyst inlet temperature exceeds 1250 degrees F and the engine shuts down:</p> <ol style="list-style-type: none"> <li>1. The name, title, and affiliation of the person who recorded the entry;</li> <li>2. The date and time that the temperature exceeded 1250 degrees F;</li> <li>3. The date and time that the engine ceased operation;</li> <li>4. The reason for catalyst inlet temperature exceedance;</li> <li>5. What steps have been taken to correct the problem or prevent another catalyst inlet temperature exceedance</li> </ol> <p>The records shall be kept for a minimum of 5 years and be readily accessible to the Department upon request. [N.J.A.C. 7:27-22.16(o)]</p>	None.
4	<p>The NSCR (CD1) catalyst array(s) shall be maintained and replaced in accordance with the recommendations and schedules of the manufacturer, and as necessary based on emission levels indicated through periodic emission monitoring / Stack Testing. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Other: Monitored by documentation of maintenance and catalyst replacement upon occurrence of event.[N.J.A.C. 7:27-22.16(o)].</p>	<p>Other: Record keeping by manual logging of parameter or storing data in computer system. The permittee shall maintain the catalyst maintenance and replacement records on-site.[N.J.A.C. 7:27-22.16(o)].</p>	None.

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**Emission Unit:** U2 Gas Compressor Engine - Natural Gas Fired

**Operating Scenario:** OS Summary

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Summary of Applicable Federal Regulations: 40 CFR 63 Subpart ZZZZ [None]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
2	<p>RENEWAL STACK TEST SUMMARY: (NOx and CO)</p> <p>The permittee shall conduct a stack test at least 18 months prior to the expiration of the initial or renewed operating permit using an approved protocol to demonstrate compliance with emission limits for NOx and CO as specified in the compliance plan for OS Summary and OS1.</p> <p>Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition.</p> <p>"worst-case" permitted operating conditions, for the compressor engine, is defined as when the turbine is operating at worst-case permitted operating conditions, pursuant to U1 of this permit. However, the heat input to the compressor engine shall not exceed the permitted maximum heat input (U2, OS1).</p> <p>***NOTE***                      If the engine is not operated during the permit term, stack testing need not be performed. However, if a stack test protocol has not been submitted at least 30 months prior to the expiration of the operating permit due to lack of engine operation and the engine is then operated during the last 30 months of the permit term, the permittee shall:</p> <ol style="list-style-type: none"> <li>1) Within 30 days of the first operation, submit a stack test protocol to EMS; and</li> <li>2) Within 1 year of the first operation, conduct stack testing as per "RENEWAL STACK TEST SUMMARY" above.</li> </ol> <p>[N.J.A.C. 7:27-22.16(a)]</p>	<p>Other: Monitoring as required under the applicable operating scenario(s).</p> <p>In accordance with N.J.A.C. 7:27-19.15(a)2, any NOx testing conducted pursuant to this section shall be conducted concurrently with CO testing. The applicable NOx emission limits in N.J.A.C. 7:27-19 will not be considered to have been met unless the concurrent CO testing demonstrates compliance with the CO limit in N.J.A.C. 7:27-16.9 or the permit limit for CO, whichever is more stringent, is also met.[N.J.A.C. 7:27-22.16(o)].</p>	<p>Other: Recordkeeping as required under the applicable operating scenario(s). [N.J.A.C. 7:27-22.16(o)].</p>	<p>Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. Submit a stack test protocol to the Emission Measurement Section (EMS) at Mail Code: 09-01, PO Box 420, Trenton, NJ 08625 at least 30 months prior to the expiration of the approved operating permit (or within 30 days of first operation during the permit term, as applicable). The protocol and test report must be prepared and submitted on a CD using the Electronic Reporting Tool (ERT), unless another format is approved by EMS. The ERT program can be downloaded at: <a href="http://www.epa.gov/ttnchie1/ert">http://www.epa.gov/ttnchie1/ert</a>.</p> <p>Within 30 days of protocol approval or no less than 60 days prior to the testing deadline, whichever is later, the permittee must contact EMS at 609-984-3443 to schedule a mutually acceptable test date.</p> <p>A full stack test report must be submitted to EMS and a certified summary test report 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. [N.J.A.C. 7:27-22.18(e)] and . [N.J.A.C. 7:27-22.18(h)]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	<p>PERIODIC EMISSION MONITORING (NOx and CO):</p> <p>The permittee shall conduct periodic emission monitoring once during each calendar year that the engine is operated to demonstrate compliance with emission limits for NOx and CO as specified in the compliance plan for OS Summary and OS1. The minimum duration between tests must be 180 calendar days.</p> <p>If any periodic emission test fails to demonstrate compliance with any applicable emission limit in OS Summary or OS1, periodic emission monitoring shall be conducted once during each calendar quarter that the engine is operated, with a minimum duration of 45 calendar days between tests. Once 8 consecutive quarterly tests have demonstrated compliance with all applicable emission limits in OS Summary and OS1, the permittee may submit a permit modification to request that testing frequency be returned to once per year. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Monitored by periodic emission monitoring at the approved frequency of once during each calendar year that the engine is operated. Perform periodic emission monitoring of NOx, CO and O2. The minimum duration between periodic emission monitoring tests shall be 180 calendar days.</p> <p>Periodic emission monitoring for NOx, CO and O2 shall be consistent with the requirements specified in NJDEP Technical Manual 1005 posted on AQPP webpage at <a href="http://www.state.nj.us/dep/aqpp">http://www.state.nj.us/dep/aqpp</a>. The permittee shall use reference method or site specific method testing provided in the Technical Manual 1005 as part of any periodic monitoring procedure. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Submit a report: Annually.</p> <p>The permittee shall notify Enforcement at least 24 hours prior to performing periodic emission monitoring. Periodic emission monitoring for NOx, CO and O2 shall be performed once during each calendar year that the engine operates, in accordance with Technical Manual 1005 or by another method/procedure approved by EMS.</p> <p>Test reports shall be submitted to Chief, REO within 45 days following the end of each calendar year (starting with 2014) in the approved format to identify the facility name, emission unit, test date, and total operating hours for that year. The test results must be certified by a licensed professional engineer or by a certified industrial hygienist. [N.J.A.C. 7:27-22.16(o)]</p>
4	<p>CO &lt;= 500 ppmvd @ 15% O2. VOC RACT rule emission limit applies during all operation of the engine. [N.J.A.C. 7:27-16.10(b)]</p>	<p>CO: Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>	<p>CO: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Stack Test - Submit protocol, conduct test and submit results: As per the approved schedule. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>
5	<p>CO &lt;= 500 ppmvd @ 15% O2. VOC RACT rule emission limit applies during all operation of the engine. [N.J.A.C. 7:27-16.10(b)]</p>	<p>CO: Monitored by periodic emission monitoring at the approved frequency, based on the averaging period as per approved sampling protocol. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>	<p>CO: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>	<p>Submit a report: Annually. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
6	<p>The owner or operator of a stationary reciprocating engine that has a maximum rated power output of 37 kW or more shall adjust the combustion process in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and in accordance with the manufacturer's recommended procedures and maintenance schedules. [N.J.A.C. 7:27-16.10(e)] and [N.J.A.C. 7:27-19.8(f)]</p>	<p>Monitored by periodic emission monitoring upon performing combustion adjustment. Monitoring shall be performed in accordance with the specific procedures for combustion adjustment monitoring specified in NJDEP Technical Manual 1005. [N.J.A.C. 7:27-19.16(g)]</p>	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon performing combustion adjustment. The permittee shall record the following information for each adjustment in a log book or computer data system:</p> <ol style="list-style-type: none"> <li>1. The date and times the adjustment began and ended;</li> <li>2. The name, title, and affiliation of the person who performed the procedure and adjustment;</li> <li>3. The type of procedure and maintenance performed;</li> <li>4. The concentration of NOx, CO, and O2 measured before and after the adjustment was made; and</li> <li>5. The type and amount of fuel use over the 12 months prior to the adjustment.</li> </ol> <p>The records shall be kept for a minimum of 5 years and be readily accessible to the Department upon request. [N.J.A.C. 7:27-19.16(h)]</p>	<p>None.</p>
7	<p>An exceedance of an emission limit that occurs during an adjustment of the combustion process under N.J.A.C. 7:27-19.16(g) is not a violation of this subchapter if it occurs as a result of the adjustment. After the combustion adjustment has been completed, the maximum emission rate of any contaminant shall not exceed the maximum allowable emission rate applicable under this subchapter or under an operating permit issued pursuant to N.J.A.C. 7:27-22 or an applicable certificate issued pursuant to N.J.A.C. 7:27-8. [N.J.A.C. 7:27-19.16(f)]</p>	<p>None.</p>	<p>None.</p>	<p>None.</p>

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
8	Hours of Operation While Firing Natural Gas <= 2,500 hours per 12 consecutive calendar month period, rolling 1 month basis. [N.J.A.C. 7:27-21.16(e)]	<p>Hours of Operation While Firing Natural Gas: Monitored by hour/time monitor continuously, based on a consecutive 12 month period (rolling 1 month basis).</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>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)]</p>	<p>Hours of Operation While Firing Natural Gas: Recordkeeping by data acquisition system (DAS) / electronic data storage each month during operation. Maintain a record of total hours of operation, during each calendar month.</p> <p>Total hours of engine operation shall be calculated once each month, by adding the total hours of engine operation during that month to the total hours of engine operation during the immediately preceding 11 calendar months.</p> <p>All records shall be kept for a minimum of 5 years and be readily accessible to the Department upon request. [N.J.A.C. 7:27-22.16(o)]</p>	None.
9	Natural Gas Usage <= 33.2 MMft <sup>3</sup> per any consecutive 12 month period, rolling one month basis. Annual natural gas consumption limit for the gas compressor engine (U2), based on maximum heat input (13.6 MMBtu/hr), a natural gas heating value of 1023 MMBtu/MMScf and 2500 hr/yr of natural gas operation. [N.J.A.C. 7:27-22.16(a)]	<p>Natural Gas Usage: Monitored by fuel flow/firing rate instrument continuously, based on a consecutive 12 month period (rolling 1 month basis).</p> <p>The permittee shall install, calibrate and maintain the monitor(s) in accordance with the manufacturer's specifications.</p> <p>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)]</p>	<p>Natural Gas Usage: Recordkeeping by data acquisition system (DAS) / electronic data storage each month during operation. Maintain a record of fuel use, in CUFT, during each calendar month.</p> <p>Cubic feet of natural gas consumed during any consecutive 12 calendar month period shall be calculated by adding the cubic feet of natural gas consumed during any one calendar month to the total cubic feet of natural gas consumed during the immediately preceding 11 calendar months. [N.J.A.C. 7:27-22.16(o)]</p>	None.
10	NOx (Total) <= 1.75 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
11	CO <= 2.63 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
12	VOC (Total) <= 0.631 tons/yr. This limit includes Formaldehyde emissions. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
13	TSP <= 1.63 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
14	PM-10 (Total) <= 1.63 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
15	PM-2.5 (Total) <= 1.63 tons/yr. Based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
16	Methane <= 0.0373 tons/yr. Based on combustion of all permitted natural gas (permit limit = 33.2 MMScf/yr), a natural gas heating value of 1020 MMBtu/MMScf and 40 CFR 98, Subpart C, Table C-2 emission factor of 1.0 g/MMBtu.. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
17	Nitrous oxide <= 0.00373 tons/yr. Based on combustion of all permitted natural gas (permit limit = 33.2 MMScf/yr), a natural gas heating value of 1020 MMBtu/MMScf and 40 CFR 98, Subpart C, Table C-2 emission factor of 0.1 g/MMBtu.. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
18	HAPs (Total) <= 0.481 tons/yr. Based on the sum of all permitted HAPs (those with a PTE above the N.J.A.C.7:27-17 reporting threshold). [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
19	Acetaldehyde <= 0.0474 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
20	Acrolein <= 0.0447 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
21	Benzene <= 0.0269 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
22	Butadiene (1,3-) <= 0.0113 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
23	Ethylene dibromide <= 0.000362 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
24	Formaldehyde <= 0.349 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
25	Naphthalene <= 0.00165 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
26	Tetrachloroethane (1,1,2,2-) <= 0.00043 tons/yr. Based on combustion of natural gas for 2500 hours. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
27	Any individual hazardous air pollutant emissions, not specifically listed in this permit, are below the reporting thresholds listed in N.J.A.C. 7:27-17. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
28	The owner or operator shall install a Non-selectiv Catalytic Reduction (NSCR) system to reduce HAP emissions from the stationary RICE by October 19, 2013 and shall conduct an initial compliance demonstration by April 19, 2014 according to 40 CFR 63.7(a)(2). [40 CFR 63.6603(a)]	Monitored by periodic emission monitoring once initially. The compliance demonstration must consist of at least three test runs and each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to 40 CFR 63 Subpart ZZZZ must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement. The CO and O2 measurements must be performed using one of the CO and O2 measurement methods specified in Table 4 of 40 CFR 63 Subpart ZZZZ, or using appendix A to 40 CFR 63 Subpart ZZZZ. THC measurements must be performed using method 25A, reported as propane, of 40 CFR part 60, appendix A. Measurements to determine O2 concentration must be made at the same time as the measurements for CO or THC concentration. If demonstrating compliance with the CO or THC percent reduction requirement, CO or THC and O2 emissions must be measured simultaneously at the inlet and outlet of the control device. [40 CFR 63.6630(e)]	Recordkeeping by manual logging of parameter or storing data in a computer data system once initially. The permittee must keep records in a form suitable and readily available (in hard copy or electronic form) for expeditious review. According to 40 CFR 63.10(b)(1), each record must be kept for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record, except that the most recent 2 years of data do not have to be retained on site, per Table 8 of 40 CFR 63 Subpart ZZZZ. [40 CFR 63.6660]	Submit documentation of compliance: Once initially. You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to 40 CFR 63.9(h)(2)(ii) before the close of business on the 60th day following the completion of the initial compliance demonstration, to the EPA Administrator Region 2 and NJDEP Regional Enforcement Office. [40 CFR 63.6645(h)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
29	The owner or operator must install equipment to immediately shut down the engine if the catalyst inlet temperature exceeds 1250 degrees Fahrenheit OR must install, operate, and maintain continuous parameter monitoring system (CPMS) to continuously monitor catalyst inlet temperature according to a site-specific monitoring plan per the requirements in 40 CFR 63.6625(b)(1) through (6), as specified in Tables 5 and 6 to 40 CFR 63 Subpart ZZZZ. CPMS shall reduce the catalyst inlet temperature to 4-hour rolling average and maintain the 4-hour rolling averages within the limitation of greater than or equal to 750 degrees F and less than or equal to 1250 degrees F. [40 CFR 63.6612]	Monitored by temperature instrument continuously. The CPMS must collect data at least once every 15 minutes. For a CPMS measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger. [40 CFR 63.6612]	Recordkeeping by strip chart or data acquisition (DAS) system continuously if CPMS is chosen to monitor the temperature. [40 CFR 63.6660]	None.
30	During startup and shutdown, the owner or operator shall minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR 63.6603(a)] or [40 CFR 63.6625(h)]	None.	None.	None.
31	The engine must be in compliance with all applicable emission limitations, operating limitations, and other requirements in Subpart ZZZZ of 40 CFR 63 at all times. [40 CFR 63.6605(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
32	At all times the owner or operator must operate and maintain a RICE including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. [40 CFR 63.6605(b)]	None.	Recordkeeping by manual logging of parameter or storing data in a computer data system annually. The permittee must keep records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.6660]	None.
33	The permittee shall conduct an initial demonstration and subsequent annual demonstrations to show that the average CO reduction is $\geq 75\%$ , or the average CO concentration $\leq 270$ ppmvd @15% O <sub>2</sub> , or the average THC reduction is $\geq 30\%$ as specified in Table 5 and Table 6 in 40 CFR 63 Subpart ZZZZ. [40 CFR 63.6630(e)] and [40 CFR 63.6640(c)]	Monitored by periodic emission monitoring annually. The permittee must measure CO emissions using one of the measurement methods specified in Table 4 of 40 CFR 63 Subpart ZZZZ, or using appendix A to 40 CFR 63 Subpart ZZZZ, and must measure O <sub>2</sub> emissions using one of the measurement methods specified in Table 4 of 40 CFR 63 Subpart ZZZZ. Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for CO concentration. [40 CFR 63.6630(e)] and [40 CFR 63.6640(c)]	Recordkeeping by manual logging of parameter or storing data in a computer data system annually. The permittee must keep records in a form suitable and readily available (in hard copy or electronic form) for expeditious review. According to 40 CFR 63.10(b)(1), each record must be kept for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record, except that the most recent 2 years of data do not have to be retained on site, per Table 8 of 40 CFR 63 Subpart ZZZZ. [40 CFR 63.6660]	Repair equipment: Upon occurrence of event. If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of 40 CFR 63 Subpart ZZZZ, the RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of 40 CFR 63 Subpart ZZZZ. If the retest shows that the emissions continue to exceed the specified levels, the RICE must again be shut down as soon as safely possible, and the RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of 40 CFR 63 Subpart ZZZZ. [40 CFR 63.6640(c)(7)]

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<b>Ref.#</b>	<b>Applicable Requirement</b>	<b>Monitoring Requirement</b>	<b>Recordkeeping Requirement</b>	<b>Submittal/Action Requirement</b>
34	The owner or operator must submit compliance reports semiannually according to the requirements in 40 CFR 63.6650(b)(1) through (5). [40 CFR 63.6650(b)]	None.	Recordkeeping by manual logging of parameter or storing data in a computer data system semiannually: once every six months; six month cycle shall begin on January 1 and July 1 of each year. The permittee must keep: (1) A copy of each notification and report submitted to comply with 40 CFR 63 Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status, according to the requirement in 40 CFR 63.10(b)(2)(xiv); (2) Records of the occurrence and duration of each malfunction of operation ( i.e., process equipment) or the air pollution control and monitoring equipment; (3) Records of performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii); (4) Records of all required maintenance performed on the air pollution control and monitoring equipment. [40 CFR 63.6655]	Submit a report: Semi-annually on January 31 and July 31 of each year to the EPA Administrator Region 2 and NJDEP Regional Enforcement Office. The first Compliance report must cover the period beginning on October 19, 2013 and ending June 30, 2014. Each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. The report must contain the results of the annual compliance demonstration if conducted during the reporting period. For sources subject to permitting regulations pursuant to 40 CFR part 70, the permittee may submit the first and subsequent Compliance reports according to the dates the permitting authority has established. [40 CFR 63.6650(b)]
35	The owner or operator shall comply with the General Provisions as shown in Table 8 to Subpart ZZZZ of 40 CFR 63 that apply to an existing non-emergency non-black start SI RICE > 500 HP constructed or reconstructed before June 12, 2006 and located at an area source of HAP emissions. [40 CFR 63.6665]	None.	None.	None.

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**Emission Unit:** U2 Gas Compressor Engine - Natural Gas Fired

**Operating Scenario:** OS1 Natural Gas Fired Natural Gas Compressor Engine

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	Opacity <= 20 %. Visible emissions from stationary internal combustion engines shall not exceed 20% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds.  NOTE: This requirement applies during all operation of the engine, including start up and shut down. [N.J.A.C. 7:27- 3.5]	None.	None.	None.
2	Opacity <= 10 %. Visible emissions from stationary internal combustion engines shall not exceed 10% opacity, exclusive of visible condensed water vapor, for more than 10 consecutive seconds.  NOTE: This requirement applies during all operation of the engine, except during start up and shut. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
3	Particulate Emissions <= 6.72 lb/hr. Particulate emission limit from the combustion of natural gas based on rated heat input of 13.6 MMBtu/hr (HHV). [N.J.A.C. 7:27- 4.2(a)]	None.	None.	None.
4	NOx (Total) <= 1.5 grams/brake horsepower-hour. NOx RACT emission limit applies during all periods of natural gas combustion. [N.J.A.C. 7:27-19.8(a)]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
5	NOx (Total) <= 1.5 grams/brake horsepower-hour. NOx RACT emission limit applies during all periods of natural gas combustion. [N.J.A.C. 7:27-19.8(a)]	NOx (Total): Monitored by periodic emission monitoring at the approved frequency. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
6	I.C. Engine fuel limited to natural gas. [N.J.A.C. 7:27-22.16(e)]	None.	Recordkeeping by invoices / bills of lading / certificate of analysis per delivery. [N.J.A.C. 7:27-22.16(o)]	None.
7	Maximum Gross Heat Input <= 13.6 MMBTU/hr (HHV). Maximum heat input for the gas compressor engine (U2), during natural gas combustion. [N.J.A.C. 7:27-22.16(a)]	Maximum Gross Heat Input: Monitored by fuel flow/firing rate instrument continuously. [N.J.A.C. 7:27-22.16(o)]	Maximum Gross Heat Input: Recordkeeping by data acquisition system (DAS) / electronic data storage each month during operation. [N.J.A.C. 7:27-22.16(o)]	None.
8	NOx (Total) <= 28 ppmvd @ 15% O2. Maximum emission rate while combusting natural gas, based on vendor guarantee. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
9	NOx (Total) <= 28 ppmvd @ 15% O2. Maximum emission rate while combusting natural gas, based on vendor guarantee. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by periodic emission monitoring at the approved frequency. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
10	NOx (Total) <= 1.4 lb/hr. Maximum emission rate while combusting natural gas, based on vendor guaranteed concentration. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
11	NOx (Total) <= 1.4 lb/hr. Maximum emission rate while combusting natural gas, based on vendor guaranteed concentration. [N.J.A.C. 7:27-22.16(a)]	NOx (Total): Monitored by periodic emission monitoring at the approved frequency. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	NOx (Total): Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
12	CO <= 270 ppmvd @ 15% O2. Maximum emission rate while combusting natural gas, based on vendor guarantee. [N.J.A.C. 7:27-22.16(a)]	CO: Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
13	CO <= 270 ppmvd @ 15% O <sub>2</sub> . Maximum emission rate while combusting natural gas, based on vendor guarantee. [N.J.A.C. 7:27-22.16(a)]	CO: Monitored by periodic emission monitoring at the approved frequency. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
14	CO <= 2.1 lb/hr. Maximum emission rate while combusting natural gas, based on vendor guaranteed concentration. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by stack emission testing prior to permit expiration date, based on the average of three Department validated stack test runs. See "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by stack test results prior to permit expiration date. See "RENEWAL STACK TEST SUMMARY" 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 "RENEWAL STACK TEST SUMMARY" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
15	CO <= 2.1 lb/hr. Maximum emission rate while combusting natural gas, based on vendor guaranteed concentration. [N.J.A.C. 7:27-22.16(e)]	CO: Monitored by periodic emission monitoring at the approved frequency. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	CO: Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]	Submit a report: Annually. See "PERIODIC EMISSION MONITORING" in OS Summary. [N.J.A.C. 7:27-22.16(o)]
16	VOC (Total) <= 29 ppmvd @ 7% O <sub>2</sub> . This limit includes formaldehyde emissions. Maximum emission rate while combusting natural gas, based on vendor guarantee. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
17	VOC (Total) <= 0.505 lb/hr. This limit includes formaldehyde emissions. Maximum emission rate while combusting natural gas, based on vendor guaranteed concentration. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
18	TSP <= 1.3 lb/hr. Maximum emission rate while combusting natural gas, based on AP-42 emission factor. [N.J.A.C. 7:27-22.16(e)]	None.	None.	None.
19	PM-10 (Total) <= 1.3 lb/hr. Maximum emission rate while combusting natural gas, based on AP-42 emission factor. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
20	PM-2.5 (Total) <= 1.3 lb/hr. Maximum emission rate while combusting natural gas, based on PM-10 emission limit. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

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Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
21	Methane $\leq$ 0.03 lb/hr. Based on permitted maximum heat input of 13.6 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 1.0 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Methane: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
22	Nitrous oxide $\leq$ 0.268 lb/hr. Based on permitted maximum heat input of 13.6 MMBtu/hr and 40 CFR 98, Subpart C, Table C-2 emission factor of 0.1 g/MMBtu. [N.J.A.C. 7:27-22.16(a)]	Nitrous oxide: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
23	Acetaldehyde $\leq$ 0.0379 lb/hr. Maximum emission rate while combusting natural gas, based on maximum heat input (13.6 MMBtu/hr) and AP-42 emission factor (2.79E-3 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Acetaldehyde: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
24	Acrolein $\leq$ 0.0358 lb/hr. Maximum emission rate while combusting natural gas, based on maximum heat input (13.6 MMBtu/hr) and AP-42 emission factor (2.63E-3 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Acrolein: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
25	Benzene $\leq$ 0.0215 lb/hr. Maximum emission rate while combusting natural gas, based on maximum heat input (13.6 MMBtu/hr) and AP-42 emission factor (1.58E-3 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Benzene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
26	Butadiene (1,3-) $\leq$ 0.00902 lb/hr. Maximum emission rate while combusting natural gas, based on maximum heat input (13.6 MMBtu/hr) and AP-42 emission factor (6.63E-4 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Butadiene (1,3-): Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
27	Ethylene dibromide $\leq$ 0.00029 lb/hr. Maximum emission rate while combusting natural gas, based on maximum heat input (13.6 MMBtu/hr) and AP-42 emission factor (2.1E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Ethylene dibromide: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.

BOP180002

**New Jersey Department of Environmental Protection  
Facility Specific Requirements**

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
28	Formaldehyde $\leq$ 0.279 lb/hr. Maximum emission rate while combusting natural gas, based on maximum heat input (13.6 MMBtu/hr) and AP-42 emission factor (2.1E-2 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Formaldehyde: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
29	Naphthalene $\leq$ 0.00132 lb/hr. Maximum emission rate while combusting natural gas, based on maximum heat input (13.6 MMBtu/hr) and AP-42 emission factor (9.7E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Naphthalene: Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
30	Tetrachloroethane (1,1,2,2-) $\leq$ 0.000344 lb/hr. Maximum emission rate while combusting natural gas, based on maximum heat input (13.6 MMBtu/hr) and AP-42 emission factor (2.53E-5 lb/MMBtu). [N.J.A.C. 7:27-22.16(a)]	Tetrachloroethane (1,1,2,2-): Monitored by calculations once initially. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain initial calculations and make available to the Department upon request.[N.J.A.C. 7:27-22.16(o)].	None.
31	Any individual hazardous air pollutant emissions, not specifically listed in this permit, are below the reporting thresholds listed in N.J.A.C. 7:27-17. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.

**New Jersey Department of Environmental Protection**  
**Facility Profile (General)**

**Facility Name (AIMS):** Sherman Ave. Energy Center

**Facility ID (AIMS):** 75476

**Street** CALPINE NEW JERSEY GENERATION LLC  
**Address:** SHERMAN AVE ENERGY CTR  
2600 S. ORCHARD RD  
VINELAND, NJ 08360

**Mailing** CALPINE CORPORATION  
**Address:** 4001 EAST MAIN ST  
MILLEVILLE, NJ 08332

**County:** Cumberland

**Location** Near the intersection of S. Orchard Rd &  
**Description:** Sherman Ave.

<b>State Plane Coordinates:</b>	
<b>X-Coordinate:</b>	
<b>Y-Coordinate:</b>	
<b>Units:</b>	
<b>Datum:</b>	
<b>Source Org.:</b>	Other/Unknown
<b>Source Type:</b>	Hard Copy Map

<b>Industry:</b>	
<b>Primary SIC:</b>	4911
<b>Secondary SIC:</b>	
<b>NAICS:</b>	221112

New Jersey Department of Environmental Protection  
Facility Profile (General)

**Contact Type: Air Permit Information Contact**

**Organization:** Calpine New Jersey Generation, LLC

**Org. Type:** LLC

**Name:** Gregory A. Pikul

**NJ EIN:** 00060103035

**Title:** Environmental Manager

**Phone:** (302) 468-5311 x

**Mailing Address:** 500 Delaware Avenue

**Fax:** (302) 295-5081 x

Suite 600

**Other:** (732) 742-6152 x

Wilmington, DE 19801

**Type:** Mobile

**Email:** Greg.Pikul@Calpine.com

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**Contact Type: BOP - Operating Permits**

**Organization:** NJ DEP

**Org. Type:** State

**Name:** Michael Hogan

**NJ EIN:**

**Title:** Environmental Engineer 2

**Phone:** (609) 633-1124 x

**Mailing Address:** Mail Code 401-02

**Fax:** ( ) - x

DEP Air Quality Program, PO Box 420

**Other:** ( ) - x

401 East State Street, 2nd floor

**Type:**

Trenton, NJ 08625-0420

**Email:** Michael.Hogan@dep.nj.gov

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**Contact Type: Emission Statements**

**Organization:** Calpine New Jersey Generation, LLC

**Org. Type:** LLC

**Name:** Sarah Deater

**NJ EIN:** 00060103039

**Title:** EHS Specialist

**Phone:** (302) 761-7008 x

**Mailing Address:** 4001 East Main St.

**Fax:** (856) 293-8653 x

Millville, NJ 08332

**Other:** (302) 593-6923 x

**Type:** Mobile

**Email:** sarah.deater@calpine.com

**New Jersey Department of Environmental Protection**  
**Facility Profile (General)**

**Contact Type: Environmental Officer**

**Organization:** Calpine New Jersey Generation, LLC      **Org. Type:** LLC  
**Name:** Gregory A. Pikul      **NJ EIN:** 00060103035  
**Title:** Environmental Manager  
**Phone:** (302) 468-5311 x      **Mailing Address:** 500 Delaware Avenue  
**Fax:** (302) 295-5081 x      Suite 600  
**Other:** (732) 742-6152 x      Wilmington, DE 19801  
**Type:** Mobile  
**Email:** Greg.Pikul@Calpine.com

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**Contact Type: Fees/Billing Contact**

**Organization:** Calpine New Jersey Generation, LLC      **Org. Type:** LLC  
**Name:** Sarah Deater      **NJ EIN:** 00060103039  
**Title:** EHS Specialist  
**Phone:** (302) 761-7008 x      **Mailing Address:** 4001 East Main St.  
**Fax:** (856) 293-8653 x      Millville, NJ 08332  
**Other:** (302) 593-6923 x  
**Type:** Mobile  
**Email:** sarah.deater@calpine.com

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**Contact Type: General Contact**

**Organization:** Calpine New Jersey Generation, LLC      **Org. Type:** LLC  
**Name:** Gregory A. Pikul      **NJ EIN:** 00060103035  
**Title:** Environmental Manager  
**Phone:** (302) 468-5311 x      **Mailing Address:** 500 Delaware Avenue  
**Fax:** (302) 295-5081 x      Suite 600  
**Other:** (732) 742-6152 x      Wilmington, DE 19801  
**Type:** Mobile  
**Email:** Greg.Pikul@Calpine.com

**New Jersey Department of Environmental Protection**  
**Facility Profile (General)**

**Contact Type: Operator**

**Organization:** Calpine Operating Services Company, Inc.      **Org. Type:** Corporation  
**Name:** Paul Ostberg      **NJ EIN:**  
**Title:** General Manager  
**Phone:** (856) 293-8725 x      **Mailing Address:** 4001 East Main St.  
**Fax:** (856) 293-8653 x      Millville, NJ 08332  
**Other:** (361) 537-2101 x  
**Type:** Mobile  
**Email:** Paul.Ostberg@Calpine.com

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**Contact Type: Owner (Current Primary)**

**Organization:** Calpine New Jersey Generation, LLC      **Org. Type:** LLC  
**Name:** Jan Stavinoha      **NJ EIN:** 00060103035  
**Title:** Manager, EHS  
**Phone:** (713) 570-4814 x      **Mailing Address:** 717 Texas Ave.  
**Fax:** (302) 295-5081 x      Suite 1000  
**Other:** (281) 660-7828 x      Houston, TX 77002  
**Type:** Mobile  
**Email:** Jan.Stavinoha@Calpine.com

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**Contact Type: Responsible Official**

**Organization:** Calpine New Jersey Generation, LLC      **Org. Type:** LLC  
**Name:** Paul Ostberg      **NJ EIN:**  
**Title:** General Manager  
**Phone:** (856) 293-8725 x      **Mailing Address:** 4001 East Main St.  
**Fax:** (856) 293-8653 x      Millville, NJ 08332  
**Other:** (361) 537-2101 x  
**Type:** Mobile  
**Email:** Paul.Ostberg@Calpine.com

**New Jersey Department of Environmental Protection  
Insignificant Source Emissions**

IS NJID	Source/Group Description	Equipment Type	Location Description	Estimate of Emissions (tpy)								
				VOC (Total)	NOx	CO	SO	TSP	PM-10	Pb	HAPS (Total)	Other (Total)
IS5	Lube Oil Tank and Mist Eliminators (Tank < 2,000 gallons; Mist Eliminator < 50 lb/hr throughput)	Other Equipment	CT Structure	0.200	0.000	0.000	0.000	0.000	0.000	0.000	0.00000000	0.000
IS7	(2) Ultra Low Sulfur Distillate Oil Storage Tanks (750,000 gal each) [NON APPLICABLE VOC >10,000 gal]	Storage Vessel	Both Supply U1	0.210	0.000	0.000	0.000	0.000	0.000	0.000	0.00000000	0.000
Total				0.410	0.000	0.000	0.000	0.000	0.000	0.000	0.00000000	0.000

BOP180002

**New Jersey Department of Environmental Protection  
Equipment Inventory**

<b>Equip. NJID</b>	<b>Facility's Designation</b>	<b>Equipment Description</b>	<b>Equipment Type</b>	<b>Certificate Number</b>	<b>Install Date</b>	<b>Grand- Fathered</b>	<b>Last Mod. (Since 1968)</b>	<b>Equip. Set ID</b>
E1	CT-1	Combustion Turbine	Combustion Turbine	092883	5/30/1991	No	7/20/1992	
E2	CE-1	Gas Compressor Engine	Stationary Reciprocating Engine	095782	5/30/1991	No	7/20/1992	

75476 SHERMAN AVE ENERGY CENTER BOP180002 E1 (Combustion Turbine)  
Print Date: 10/16/2020

Make:	<input type="text"/>		
Manufacturer:	<input type="text" value="General Electric"/>		
Model:	<input type="text" value="7 EA"/>		
Maximum rated Gross Heat Input (MMBtu/hr-HHV):	<input type="text" value="1,032.00"/>		
Type of Turbine:	<input type="text" value="Industrial"/>		
Type of Cycle:	<input type="text" value="Simple-Cycle"/>	Description:	<input type="text"/>
Industrial Application:	<input type="text" value="Electrical Generator"/>	Description:	<input type="text"/>
Power Output:	<input type="text" value="96.00"/>	Units:	<input type="text" value="Megawatts"/>
Is the combustion turbine using (check all that apply):			
A Dry Low NOx Combustor:	<input type="checkbox"/>	Steam to Fuel Ratio:	<input type="text"/>
Steam Injection:	<input type="checkbox"/>	Water to Fuel Ratio:	<input type="text"/>
Water Injection:	<input checked="" type="checkbox"/>	Description:	<input type="text" value="Inlet Air Fogging"/>
Other:	<input checked="" type="checkbox"/>		
Is the turbine Equipped with a Duct Burner?	<input type="radio"/> Yes <input checked="" type="radio"/> No		
Have you attached a diagram showing the location and/or the configuration of this equipment?	<input type="radio"/> Yes <input checked="" type="radio"/> No		
	Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?		
	<input type="radio"/> Yes <input checked="" type="radio"/> No		
Comments:	<input type="text" value="96 MW (Winter); 84 MW (Summer)"/> <input type="text" value="Water to fuel ratio: 0.5 - 1.5"/> <input type="text" value="Maximum Heat Input during Non-Ozone Season: 1214.7 MMBtu/hr"/>		

**75476 SHERMAN AVE ENERGY CENTER BOP180002 E2 (Stationary Reciprocating Engine)**  
**Print Date: 10/16/2020**

Make:	<input type="text"/>
Manufacturer:	<input type="text" value="Waukesha"/>
Model:	<input type="text" value="9390GSI"/>
Maximum Rated Gross Heat Input (MMBtu/hr):	<input type="text" value="13.6"/>
Class:	<input type="text" value="Rich Burn"/>
Description:	<input type="text"/>
Duty:	<input type="text"/>
Description:	<input type="text"/>
Minimum Load Range (%):	<input type="text"/>
Maximum Load Range (%):	<input type="text"/>
Stroke:	<input type="text" value="4-stroke"/>
Power Output (BHP):	<input type="text" value="1602.4"/>
Electric Output(KW):	<input type="text"/>
Compression Ratio:	<input type="text"/>
Ignition Type:	<input type="text" value="Spark"/>
Description:	<input type="text"/>
Engine Speed (RPM):	<input type="text"/>
Engine Exhaust Temperature (°F):	<input type="text"/>
Air to Fuel Ratio at Peak Load:	<input type="text"/>
Ratio Basis:	<input type="text"/>
Lambda Factor (scfm/scfm):	<input type="text"/>
Brake Specific Fuel Consumption at Peak Load (Btu/BHP-hr):	<input type="text"/>
Output Type:	<input type="text"/>
Heat to Power Ratio:	<input type="text"/>
Is the Engine Using a Turbocharger?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Is the Engine Using an Aftercooler?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Is the Engine Using (check all that apply):	
A Prestratified Charge (PSC)	<input type="checkbox"/> A NOx Converter <input type="checkbox"/>
Air to Fuel Adjustment (AF)	<input type="checkbox"/> Ignition Timing Retard <input type="checkbox"/>
Low Emission Combustion	<input type="checkbox"/> Non-Selective Catalytic Retard (NSCR) <input checked="" type="checkbox"/>
Other	<input type="checkbox"/>
Description:	<input type="text"/>
Have you attached a diagram showing the location and/or the configuration of this equipment?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Comments:	<input type="text" value="Includes Non-Selective Catalytic Reduction (NSCR) Compression Ratio: 10:1 Engine Speed: 450 - 1200 RPM Air to Fuel Ratio at peak load: 600 - 1270"/>

Include Emission Rates on the Potential to Emit Screen for each contaminant in ppmvd @ 7%O2 in addition to lbs/hr and tons/yr.

**SHERMAN AVE ENERGY CENTER (75476)**  
**BOP180002**

Date: 10/16/2020

**New Jersey Department of Environmental Protection**  
**Control Device Inventory**

<b>CD NJID</b>	<b>Facility's Designation</b>	<b>Description</b>	<b>CD Type</b>	<b>Install Date</b>	<b>Grand-Fathered</b>	<b>Last Mod. (Since 1968)</b>	<b>CD Set ID</b>
CD1	CE-1	Non-Selective Catalytic Converter for Gas Compressor Engine	Selective Non-Catalytic Reduction	10/28/2013	No		
CD2	CT-1	Water Injection for Turbine	Other	5/30/1991	No		

75476 SHERMAN AVE ENERGY CENTER BOP180002 CD1 (Selective Non-Catalytic Reduction)  
Print Date: 10/16/2020

Make:   
Manufacturer: [DCL America Incorporated](#)  
Model: [DC75-14HGS](#)

Minimum Temperature at Reagent Injection Point (°F):

Maximum Temperature at Reagent Injection Point (°F):

Type of Reagent:

Description:

Minimum Reagent Charge Rate (gpm):

Maximum Reagent Charge Rate (gpm):

Minimum Concentration of Reagent in Solution (% Volume):

Maximum NOx to Reagent Mole Ratio:

Number of Reagent Injectors:

Location of Reagent Injectors:

Reagent Injection Method:

Maximum Anticipated Ammonia Slip (ppm):

Description of Feedback System which Controls the Amount of Reagent Charged to the Control Apparatus:

Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):

Alternative Method to Demonstrate Control Apparatus is Operating Properly: [Temperature monitoring via thermocouple - auto shut off of engine if Temp > 1250 degrees F](#)

Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?  
 Yes  No

Have you attached a diagram showing the location and/or configuration of this control apparatus?  
 Yes  No

Comments:

75476 SHERMAN AVE ENERGY CENTER BOP180002 CD1 (Selective Non-Catalytic Reduction)  
Print Date: 10/16/2020

75476 SHERMAN AVE ENERGY CENTER BOP180002 CD2 (Other)

Print Date: 10/16/2020

Make:

Manufacturer:

Model:

Maximum Air Flow Rate to Control Device (acfm):

Maximum Temperature of Vapor Stream to Control Device (°F):

Minimum Temperature of Vapor Stream to Control Device (°F):

Minimum Moisture Content of Vapor Stream to Control Device (%):

Minimum Pressure Drop Across Control Device (in. H2O):

Maximum Pressure Drop Across Control Device (in. H2O):

Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):

Alternative Method to Demonstrate Control Apparatus is Operating Properly:

Have you attached data from recent performance testing?  Yes  No

Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?  Yes  No

Have you attached a diagram showing the location and/or configuration of this control apparatus?  Yes  No

Comments:

**SHERMAN AVE ENERGY CENTER (75476)**  
**BOP180002**

Date: 10/16/2020

**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.		
PT1	CT-1	CT Stack	Rectangle	138	65	800	800.0	630.0	1,008.0	1,300,000.0	1,000,000.0	1,600,000.0	Up	
PT2	CE-1	CE Stack	Round	14	25	800	1,077.0	1,000.0	1,100.0	7,742.0	7,700.0	7,780.0	Up	

**SHERMAN AVE ENERGY CENTER (75476)  
BOP180002**

Date: 10/16/2020

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

**U 1 CT-1 Combustion Turbine**

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours		VOC Range	Flow (acfm)		Temp. (deg F)	
								Min.	Max.		Min.	Max.	Min.	Max.
OS1	CT-OIL-OZ	ULSD Fired Turbine Operating During the Ozone Season	Normal - Steady State	E1	CD2 (P)	PT1	2-01-001-01	0.0	1,500.0			630.0	1,008.0	
OS2	OIL-SUSD-OZ	ULSD Fired Turbine - Start-up and Shut Down During the Ozone Season	Startup	E1		PT1	2-01-001-01	0.0				0.0	1,008.0	
OS3	CT-OIL-NOZ	ULSD Fired Turbine Operating During the Non-Ozone Season	Normal - Steady State	E1	CD2 (P)	PT1	2-01-001-01	0.0	1,500.0			630.0	1,008.0	
OS4	OIL-SUSD-NOZ	ULSD Fired Turbine - Start-up and Shut Down During the Non-Ozone Season	Startup	E1		PT1	2-01-002-01	0.0				0.0	1,008.0	
OS5	CT-Gas-OZ	Natural Gas Fired Turbine Operating During the Ozone Season	Normal - Steady State	E1	CD2 (P)	PT1	2-01-002-01	0.0	2,500.0			630.0	1,008.0	
OS6	NG-SU/SD-OZ	Natural Gas Fired Turbine - Start up and Shut Down During the Ozone Season	Startup	E1		PT1	2-01-002-01	0.0				0.0	1,008.0	
OS7	CT-Gas-NOZ	Natural Gas Fired Turbine Operating During the Non-Ozone Season	Normal - Steady State	E1	CD2 (P)	PT1	2-01-002-01	0.0	2,500.0			630.0	1,008.0	
OS8	NG-SU/SD-NOZ	Natural Gas Fired Turbine - Start-up and Shut Down During the Non-Ozone Season	Startup	E1		PT1	2-01-002-01	0.0				0.0	1,008.0	

**SHERMAN AVE ENERGY CENTER (75476)**  
**BOP180002**

Date: 10/16/2020

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

**U 2 CE-1 Gas Compressor Engine - Natural Gas Fired**

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours		VOC Range	Flow (acfm)		Temp. (deg F)	
								Min.	Max.		Min.	Max.	Min.	Max.
OS1	CE-1	Natural Gas Fired Natural Gas Compressor Engine	Normal - Steady State	E2	CD1 (P)	PT2	2-02-002-53	0.0	2,500.0		7,700.0	7,800.0	750.0	1,250.0

**New Jersey Department of Environmental Protection  
Subject Item Group Inventory**

**Group NJID:** GR10 RGGI

**Members:**

Type	ID	OS	Step
E	E 1		
U	U 1	OS0 Summary	

**Formal Reason(s) for Group/Cap:**

Other

**Other (explain):** RGGI Requirements

**Condition/Requirements that will be complied with or are no longer applicable as a result of this Group:**

RGGI

**Operating Circumstances:**

All Operation

# **Appendix I:**

## **Cross-State Air Pollution Rule (CSAPR) Title V requirements for**

- **CSAPR NO<sub>x</sub> Annual Trading Program,**
- **CSAPR NO<sub>x</sub> Ozone Season Trading Program, and**
- **CSAPR SO<sub>2</sub> Trading Program**

## Transport Rule (TR) Trading Program Title V Requirements

### TR NO<sub>x</sub> Annual Trading Program requirements (40 CFR 97.406)

#### **(a) Designated representative requirements.**

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.413 through 97.418.

#### **(b) Emissions monitoring, reporting, and recordkeeping requirements.**

- (1) The owners and operators, and the designated representative, of each TR NO<sub>x</sub> Annual source and each TR NO<sub>x</sub> Annual unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.430 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.431 (initial monitoring system certification and recertification procedures), 97.432 (monitoring system out-of-control periods), 97.433 (notifications concerning monitoring), 97.434 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.435 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).
- (2) The emissions data determined in accordance with 40 CFR 97.430 through 97.435 shall be used to calculate allocations of TR NO<sub>x</sub> Annual allowances under 40 CFR 97.411(a)(2) and (b) and 97.412 and to determine compliance with the TR NO<sub>x</sub> Annual emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.430 through 97.435 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

#### **(c) NO<sub>x</sub> emissions requirements.**

- (1) TR NO<sub>x</sub> Annual emissions limitation.
  - (i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NO<sub>x</sub> Annual source and each TR NO<sub>x</sub> Annual unit at the source shall hold, in the source's compliance account, TR NO<sub>x</sub> Annual allowances available for deduction for such control period under 40 CFR 97.424(a) in an amount not less than the tons of total NO<sub>x</sub> emissions for such control period from all TR NO<sub>x</sub> Annual units at the source.
  - (ii). If total NO<sub>x</sub> emissions during a control period in a given year from the TR NO<sub>x</sub> Annual units at a TR NO<sub>x</sub> Annual source are in excess of the TR NO<sub>x</sub> Annual emissions limitation set forth in paragraph (c)(1)(i) above, then:
    - (A). The owners and operators of the source and each TR NO<sub>x</sub> Annual unit at the source shall hold the TR NO<sub>x</sub> Annual allowances required for deduction under 40 CFR 97.424(d); and
    - (B). The owners and operators of the source and each TR NO<sub>x</sub> Annual unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart AAAAA and the Clean Air Act.
- (2) TR NO<sub>x</sub> Annual assurance provisions.
  - (i). If total NO<sub>x</sub> emissions during a control period in a given year from all TR NO<sub>x</sub> Annual units at TR NO<sub>x</sub> Annual sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the

- common designated representative's share of such NO<sub>x</sub> emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR NO<sub>x</sub> Annual allowances available for deduction for such control period under 40 CFR 97.425(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.425(b), of multiplying— (A) The quotient of the amount by which the common designated representative's share of such NO<sub>x</sub> emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such NO<sub>x</sub> emissions exceeds the respective common designated representative's assurance level; and (B) The amount by which total NO<sub>x</sub> emissions from all TR NO<sub>x</sub> Annual units at TR NO<sub>x</sub> Annual sources in the state for such control period exceed the state assurance level.
- (ii). The owners and operators shall hold the TR NO<sub>x</sub> Annual allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.
  - (iii). Total NO<sub>x</sub> emissions from all TR NO<sub>x</sub> Annual units at TR NO<sub>x</sub> Annual sources in the State during a control period in a given year exceed the state assurance level if such total NO<sub>x</sub> emissions exceed the sum, for such control period, of the state NO<sub>x</sub> Annual trading budget under 40 CFR 97.410(a) and the state's variability limit under 40 CFR 97.410(b).
  - (iv). It shall not be a violation of 40 CFR part 97, subpart AAAAAA or of the Clean Air Act if total NO<sub>x</sub> emissions from all TR NO<sub>x</sub> Annual units at TR NO<sub>x</sub> Annual sources in the State during a control period exceed the state assurance level or if a common designated representative's share of total NO<sub>x</sub> emissions from the TR NO<sub>x</sub> Annual units at TR NO<sub>x</sub> Annual sources in the state during a control period exceeds the common designated representative's assurance level.
  - (v). To the extent the owners and operators fail to hold TR NO<sub>x</sub> Annual allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,
    - (A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and
    - (B). Each TR NO<sub>x</sub> Annual allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart AAAAAA and the Clean Air Act.
- (3) Compliance periods.
- (i). A TR NO<sub>x</sub> Annual unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015, or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.430(b) and for each control period thereafter.
  - (ii). A TR NO<sub>x</sub> Annual unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.430(b) and for each control period thereafter.
- (4) Vintage of allowances held for compliance.
- (i). A TR NO<sub>x</sub> Annual allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR NO<sub>x</sub> Annual allowance that was allocated for such control period or a control period in a prior year.

- (ii). A TR NO<sub>x</sub> Annual allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR NO<sub>x</sub> Annual allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.
  - (5) Allowance Management System requirements. Each TR NO<sub>x</sub> Annual allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart AAAAA.
  - (6) Limited authorization. A TR NO<sub>x</sub> Annual allowance is a limited authorization to emit one ton of NO<sub>x</sub> during the control period in one year. Such authorization is limited in its use and duration as follows:
    - (i). Such authorization shall only be used in accordance with the TR NO<sub>x</sub> Annual Trading Program; and
    - (ii). Notwithstanding any other provision of 40 CFR part 97, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.
  - (7) Property right. A TR NO<sub>x</sub> Annual allowance does not constitute a property right.
- (d) Title V permit revision requirements.**
- (1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR NO<sub>x</sub> Annual allowances in accordance with 40 CFR part 97, subpart AAAAA.
  - (2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.430 through 97.435, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to 40 CFR part 75, appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E). Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit using minor permit modification procedures in accordance with 40 CFR 97.406(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).
- (e) Additional recordkeeping and reporting requirements.**
- (1) Unless otherwise provided, the owners and operators of each TR NO<sub>x</sub> Annual source and each TR NO<sub>x</sub> Annual unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.
    - (i). The certificate of representation under 40 CFR 97.416 for the designated representative for the source and each TR NO<sub>x</sub> Annual unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.416 changing the designated representative.
    - (ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart AAAAA.
    - (iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR NO<sub>x</sub> Annual Trading Program.
  - (2) The designated representative of a TR NO<sub>x</sub> Annual source and each TR NO<sub>x</sub> Annual unit at the source shall make all submissions required under the TR NO<sub>x</sub> Annual Trading Program, except

as provided in 40 CFR 97.418. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

**(f) Liability.**

- (1) Any provision of the TR NO<sub>x</sub> Annual Trading Program that applies to a TR NO<sub>x</sub> Annual source or the designated representative of a TR NO<sub>x</sub> Annual source shall also apply to the owners and operators of such source and of the TR NO<sub>x</sub> Annual units at the source.
- (2) Any provision of the TR NO<sub>x</sub> Annual Trading Program that applies to a TR NO<sub>x</sub> Annual unit or the designated representative of a TR NO<sub>x</sub> Annual unit shall also apply to the owners and operators of such unit.

**(g) Effect on other authorities.**

No provision of the TR NO<sub>x</sub> Annual Trading Program or exemption under 40 CFR 97.405 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR NO<sub>x</sub> Annual source or TR NO<sub>x</sub> Annual unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

## **TR NO<sub>x</sub> Ozone Season Trading Program Requirements (40 CFR 97.506)**

### **(a) Designated representative requirements.**

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.513 through 97.518.

### **(b) Emissions monitoring, reporting, and recordkeeping requirements.**

- (1) The owners and operators, and the designated representative, of each TR NO<sub>x</sub> Ozone Season source and each TR NO<sub>x</sub> Ozone Season unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.530 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.531 (initial monitoring system certification and recertification procedures), 97.532 (monitoring system out-of-control periods), 97.533 (notifications concerning monitoring), 97.534 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.535 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).
- (2) The emissions data determined in accordance with 40 CFR 97.530 through 97.535 shall be used to calculate allocations of TR NO<sub>x</sub> Ozone Season allowances under 40 CFR 97.511(a)(2) and (b) and 97.512 and to determine compliance with the TR NO<sub>x</sub> Ozone Season emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.530 through 97.535 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

### **(c) NO<sub>x</sub> emissions requirements.**

- (1) TR NO<sub>x</sub> Ozone Season emissions limitation.
  - (i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NO<sub>x</sub> Ozone Season source and each TR NO<sub>x</sub> Ozone Season unit at the source shall hold, in the source's compliance account, TR NO<sub>x</sub> Ozone Season allowances available for deduction for such control period under 40 CFR 97.524(a) in an amount not less than the tons of total NO<sub>x</sub> emissions for such control period from all TR NO<sub>x</sub> Ozone Season units at the source.
  - (ii). If total NO<sub>x</sub> emissions during a control period in a given year from the TR NO<sub>x</sub> Ozone Season units at a TR NO<sub>x</sub> Ozone Season source are in excess of the TR NO<sub>x</sub> Ozone Season emissions limitation set forth in paragraph (c)(1)(i) above, then:
    - (A). The owners and operators of the source and each TR NO<sub>x</sub> Ozone Season unit at the source shall hold the TR NO<sub>x</sub> Ozone Season allowances required for deduction under 40 CFR 97.524(d); and
    - (B). The owners and operators of the source and each TR NO<sub>x</sub> Ozone Season unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart BBBB and the Clean Air Act.
- (2) TR NO<sub>x</sub> Ozone Season assurance provisions.
  - (i). If total NO<sub>x</sub> emissions during a control period in a given year from all TR NO<sub>x</sub> Ozone Season units at TR NO<sub>x</sub> Ozone Season sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO<sub>x</sub> emissions during such control period exceeds the common designated representative's assurance level for the state

and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR NO<sub>x</sub> Ozone Season allowances available for deduction for such control period under 40 CFR 97.525(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.525(b), of multiplying—

- (A). The quotient of the amount by which the common designated representative's share of such NO<sub>x</sub> emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such NO<sub>x</sub> emissions exceeds the respective common designated representative's assurance level; and
  - (B). The amount by which total NO<sub>x</sub> emissions from all TR NO<sub>x</sub> Ozone Season units at TR NO<sub>x</sub> Ozone Season sources in the state for such control period exceed the state assurance level.
- (ii). The owners and operators shall hold the TR NO<sub>x</sub> Ozone Season allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.
  - (iii). Total NO<sub>x</sub> emissions from all TR NO<sub>x</sub> Ozone Season units at TR NO<sub>x</sub> Ozone Season sources in the state during a control period in a given year exceed the state assurance level if such total NO<sub>x</sub> emissions exceed the sum, for such control period, of the State NO<sub>x</sub> Ozone Season trading budget under 40 CFR 97.510(a) and the state's variability limit under 40 CFR 97.510(b).
  - (iv). It shall not be a violation of 40 CFR part 97, subpart BBBBBB or of the Clean Air Act if total NO<sub>x</sub> emissions from all TR NO<sub>x</sub> Ozone Season units at TR NO<sub>x</sub> Ozone Season sources in the state during a control period exceed the state assurance level or if a common designated representative's share of total NO<sub>x</sub> emissions from the TR NO<sub>x</sub> Ozone Season units at TR NO<sub>x</sub> Ozone Season sources in the state during a control period exceeds the common designated representative's assurance level.
  - (v). To the extent the owners and operators fail to hold TR NO<sub>x</sub> Ozone Season allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,
    - (A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and
    - (B). Each TR NO<sub>x</sub> Ozone Season allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart BBBBBB and the Clean Air Act.
- (3) Compliance periods.
- (i). A TR NO<sub>x</sub> Ozone Season unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of May 1, 2015 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.530(b) and for each control period thereafter.
  - (ii). A TR NO<sub>x</sub> Ozone Season unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of May 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.530(b) and for each control period thereafter.
- (4) Vintage of allowances held for compliance.
- (i). A TR NO<sub>x</sub> Ozone Season allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR NO<sub>x</sub> Ozone

Season allowance that was allocated for such control period or a control period in a prior year.

- (ii). A TR NO<sub>x</sub> Ozone Season allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR NO<sub>x</sub> Ozone Season allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.
- (5) Allowance Management System requirements. Each TR NO<sub>x</sub> Ozone Season allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart BBBBB.
- (6) Limited authorization. A TR NO<sub>x</sub> Ozone Season allowance is a limited authorization to emit one ton of NO<sub>x</sub> during the control period in one year. Such authorization is limited in its use and duration as follows:
  - (i). Such authorization shall only be used in accordance with the TR NO<sub>x</sub> Ozone Season Trading Program; and
  - (ii). Notwithstanding any other provision of 40 CFR part 97, subpart BBBBB, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.
- (7) Property right. A TR NO<sub>x</sub> Ozone Season allowance does not constitute a property right.

**(d) Title V permit revision requirements.**

- (1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR NO<sub>x</sub> Ozone Season allowances in accordance with 40 CFR part 97, subpart BBBBB.
- (2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.530 through 97.535, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to 40 CFR part 75, appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E). Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit using minor permit modification procedures in accordance with 40 CFR 97.506(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

**(e) Additional recordkeeping and reporting requirements.**

- (1) Unless otherwise provided, the owners and operators of each TR NO<sub>x</sub> Ozone Season source and each TR NO<sub>x</sub> Ozone Season unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.
  - (i). The certificate of representation under 40 CFR 97.516 for the designated representative for the source and each TR NO<sub>x</sub> Ozone Season unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.516 changing the designated representative.
  - (ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart BBBBB.
  - (iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR NO<sub>x</sub> Ozone Season Trading Program.

(2) The designated representative of a TR NO<sub>x</sub> Ozone Season source and each TR NO<sub>x</sub> Ozone Season unit at the source shall make all submissions required under the TR NO<sub>x</sub> Ozone Season Trading Program, except as provided in 40 CFR 97.518. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

**(f) Liability.**

(1) Any provision of the TR NO<sub>x</sub> Ozone Season Trading Program that applies to a TR NO<sub>x</sub> Ozone Season source or the designated representative of a TR NO<sub>x</sub> Ozone Season source shall also apply to the owners and operators of such source and of the TR NO<sub>x</sub> Ozone Season units at the source.

(2) Any provision of the TR NO<sub>x</sub> Ozone Season Trading Program that applies to a TR NO<sub>x</sub> Ozone Season unit or the designated representative of a TR NO<sub>x</sub> Ozone Season unit shall also apply to the owners and operators of such unit.

**(g) Effect on other authorities.**

No provision of the TR NO<sub>x</sub> Ozone Season Trading Program or exemption under 40 CFR 97.505 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR NO<sub>x</sub> Ozone Season source or TR NO<sub>x</sub> Ozone Season unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

## **TR SO<sub>2</sub> Group 1 Trading Program requirements (40 CFR 97.606)**

### **(a) Designated representative requirements.**

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.613 through 97.618.

### **(b) Emissions monitoring, reporting, and recordkeeping requirements.**

- (1) The owners and operators, and the designated representative, of each TR SO<sub>2</sub> Group 1 source and each TR SO<sub>2</sub> Group 1 unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.630 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.631 (initial monitoring system certification and recertification procedures), 97.632 (monitoring system out-of-control periods), 97.633 (notifications concerning monitoring), 97.634 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.635 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).
- (2) The emissions data determined in accordance with 40 CFR 97.630 through 97.635 shall be used to calculate allocations of TR SO<sub>2</sub> Group 1 allowances under 40 CFR 97.611(a)(2) and (b) and 97.612 and to determine compliance with the TR SO<sub>2</sub> Group 1 emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.630 through 97.635 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

### **(c) SO<sub>2</sub> emissions requirements.**

#### **(1) TR SO<sub>2</sub> Group 1 emissions limitation.**

- (i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR SO<sub>2</sub> Group 1 source and each TR SO<sub>2</sub> Group 1 unit at the source shall hold, in the source's compliance account, TR SO<sub>2</sub> Group 1 allowances available for deduction for such control period under 40 CFR 97.624(a) in an amount not less than the tons of total SO<sub>2</sub> emissions for such control period from all TR SO<sub>2</sub> Group 1 units at the source.
- (ii). If total SO<sub>2</sub> emissions during a control period in a given year from the TR SO<sub>2</sub> Group 1 units at a TR SO<sub>2</sub> Group 1 source are in excess of the TR SO<sub>2</sub> Group 1 emissions limitation set forth in paragraph (c)(1)(i) above, then:
  - (A). The owners and operators of the source and each TR SO<sub>2</sub> Group 1 unit at the source shall hold the TR SO<sub>2</sub> Group 1 allowances required for deduction under 40 CFR 97.624(d); and
  - (B). The owners and operators of the source and each TR SO<sub>2</sub> Group 1 unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation 40 CFR part 97, subpart CCCC and the Clean Air Act.

#### **(2) TR SO<sub>2</sub> Group 1 assurance provisions.**

- (i). If total SO<sub>2</sub> emissions during a control period in a given year from all TR SO<sub>2</sub> Group 1 units at TR SO<sub>2</sub> Group 1 sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such SO<sub>2</sub> emissions during such control period exceeds the common designated representative's assurance level for the state and

such control period, shall hold (in the assurance account established for the owners and operators of such group) TR SO<sub>2</sub> Group 1 allowances available for deduction for such control period under 40 CFR 97.625(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.625(b), of multiplying—

- (A). The quotient of the amount by which the common designated representative's share of such SO<sub>2</sub> emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such SO<sub>2</sub> emissions exceeds the respective common designated representative's assurance level; and
  - (B). The amount by which total SO<sub>2</sub> emissions from all TR SO<sub>2</sub> Group 1 units at TR SO<sub>2</sub> Group 1 sources in the state for such control period exceed the state assurance level.
- (ii). The owners and operators shall hold the TR SO<sub>2</sub> Group 1 allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.
  - (iii). Total SO<sub>2</sub> emissions from all TR SO<sub>2</sub> Group 1 units at TR SO<sub>2</sub> Group 1 sources in the state during a control period in a given year exceed the state assurance level if such total SO<sub>2</sub> emissions exceed the sum, for such control period, of the state SO<sub>2</sub> Group 1 trading budget under 40 CFR 97.610(a) and the state's variability limit under 40 CFR 97.610(b).
  - (iv). It shall not be a violation of 40 CFR part 97, subpart CCCCC or of the Clean Air Act if total SO<sub>2</sub> emissions from all TR SO<sub>2</sub> Group 1 units at TR SO<sub>2</sub> Group 1 sources in the state during a control period exceed the state assurance level or if a common designated representative's share of total SO<sub>2</sub> emissions from the TR SO<sub>2</sub> Group 1 units at TR SO<sub>2</sub> Group 1 sources in the state during a control period exceeds the common designated representative's assurance level.
  - (v). To the extent the owners and operators fail to hold TR SO<sub>2</sub> Group 1 allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,
    - (A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and
    - (B). Each TR SO<sub>2</sub> Group 1 allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart CCCCC and the Clean Air Act.
- (3) Compliance periods.
- (i). A TR SO<sub>2</sub> Group 1 unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.630(b) and for each control period thereafter.
  - (ii). A TR SO<sub>2</sub> Group 1 unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.630(b) and for each control period thereafter.
- (4) Vintage of allowances held for compliance.
- (i). A TR SO<sub>2</sub> Group 1 allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR SO<sub>2</sub> Group 1 allowance that was allocated for such control period or a control period in a prior year.

- (ii). A TR SO<sub>2</sub> Group 1 allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR SO<sub>2</sub> Group 1 allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.
  - (5) Allowance Management System requirements. Each TR SO<sub>2</sub> Group 1 allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart CCCCC.
  - (6) Limited authorization. A TR SO<sub>2</sub> Group 1 allowance is a limited authorization to emit one ton of SO<sub>2</sub> during the control period in one year. Such authorization is limited in its use and duration as follows:
    - (i). Such authorization shall only be used in accordance with the TR SO<sub>2</sub> Group 1 Trading Program; and
    - (ii). Notwithstanding any other provision of 40 CFR part 97, subpart CCCCC, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.
  - (7) Property right. A TR SO<sub>2</sub> Group 1 allowance does not constitute a property right.
- (d) Title V permit revision requirements.**
- (1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR SO<sub>2</sub> Group 1 allowances in accordance with 40 CFR part 97, subpart CCCCC.
  - (2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.630 through 97.635, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to 40 CFR part 75, appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR part 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E), Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit using minor permit modification procedures in accordance with 40 CFR 97.606(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).
- (e) Additional recordkeeping and reporting requirements.**
- (1) Unless otherwise provided, the owners and operators of each TR SO<sub>2</sub> Group 1 source and each TR SO<sub>2</sub> Group 1 unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.
    - (i). The certificate of representation under 40 CFR 97.616 for the designated representative for the source and each TR SO<sub>2</sub> Group 1 unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.616 changing the designated representative.
    - (ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart CCCCC.
    - (iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR SO<sub>2</sub> Group 1 Trading Program.
  - (2) The designated representative of a TR SO<sub>2</sub> Group 1 source and each TR SO<sub>2</sub> Group 1 unit at the source shall make all submissions required under the TR SO<sub>2</sub> Group 1 Trading Program, except

as provided in 40 CFR 97.618. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

**(f) Liability.**

- (1) Any provision of the TR SO<sub>2</sub> Group 1 Trading Program that applies to a TR SO<sub>2</sub> Group 1 source or the designated representative of a TR SO<sub>2</sub> Group 1 source shall also apply to the owners and operators of such source and of the TR SO<sub>2</sub> Group 1 units at the source.
- (2) Any provision of the TR SO<sub>2</sub> Group 1 Trading Program that applies to a TR SO<sub>2</sub> Group 1 unit or the designated representative of a TR SO<sub>2</sub> Group 1 unit shall also apply to the owners and operators of such unit.

**(g) Effect on other authorities.**

No provision of the TR SO<sub>2</sub> Group 1 Trading Program or exemption under 40 CFR 97.605 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR SO<sub>2</sub> Group 1 source or TR SO<sub>2</sub> Group 1 unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.



## State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHRIS CHRISTIE  
*Governor*

BOB MARTIN  
*Commissioner*

KIM GUADAGNO  
*Lt. Governor*

## Appendix II

### Phase II Acid Rain permit

**Issued to:** Sherman Ave. Energy Center  
2600 Orchard Rd. (Orchard Rd and Sherman Ave.)  
Vineland, NJ 08360

**Owned by:** Calpine New Jersey Generation, LLC  
500 Delaware Avenue  
Suite 600  
Wilmington, DE 19801

**Operated by:** Calpine Operating Services Company, Inc  
373 N. Broadway  
Pennsville, NJ 08070

**ORIS Code:** 7288

**Effective:** **DRAFT**

This Acid Rain Permit is issued under the authority of Chapter 106, P.L. 1967 (N.J.S.A 26:2C-9.2) and Titles IV and V of the Clean Air Act. The owners and operators of each affected unit at the facility shall comply with all of the requirements established in this permit.

Approved by:

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Aliya Khan  
Supervisor, Bureau of Air Permits

## **ACID RAIN PERMIT CONTENTS**

- 1) STATEMENT OF BASIS
- 2) UNIT SPECIFIC REQUIREMENTS
- 3) COMMENTS, NOTES, AND JUSTIFICATIONS REGARDING PERMIT DECISIONS
- 4) PHASE II PERMIT APPLICATION

**1) Statement of Basis**

In accordance with N.J.S.A. 26:2C-9.2 and Titles IV and V of the Clean Air Act, the Department issues this permit pursuant to N.J.A.C. 7:27 et seq.

**2) Unit Specific Requirements**

Refer to 40 CFR 72 for specific requirements.

**3) Comments, Notes, And Justifications Regarding Permit Decisions**

This facility is subject to the operating permit regulations promulgated at N.J.A.C. 7:27-22. Therefore, the facility must obtain an operating permit. The procedures for incorporating this Acid Rain permit into the operating permit shall be consistent with the State requirements at N.J.A.C. 7:27-29, the Federal requirements at 40 CFR 72 and any official guidance issued by USEPA.

**4) Phase II Permit Application**

The owners and operators shall comply with all of the standard requirements and special provisions set forth on the attached Phase II permit application for each affected unit.



**Permit Requirements****STEP 3**

Read the standard requirements.

(1) The designated representative of each affected source and each affected unit at the source shall:

(i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;

(2) The owners and operators of each affected source and each affected unit at the source shall:

(i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and

(ii) Have an Acid Rain Permit.

**Monitoring Requirements**

(1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.

(2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the source or unit, as appropriate, with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.

(3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

**Sulfur Dioxide Requirements**

(1) The owners and operators of each source and each affected unit at the source shall:

(i) Hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under 40 CFR 73.34(c)), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and

(ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.

(2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.

(3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:

(i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or

(ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).

**Sulfur Dioxide Requirements, Cont'd.****STEP 3, Cont'd.**

(4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.

(5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.

(6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.

(7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

**Nitrogen Oxides Requirements**

The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

**Excess Emissions Requirements**

(1) The designated representative of an affected source that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.

(2) The owners and operators of an affected source that has excess emissions in any calendar year shall:

(i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and

(ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

**Recordkeeping and Reporting Requirements**

(1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:

(i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission

of a new certificate of representation changing the designated representative;

**STEP 3, Cont'd.****Recordkeeping and Reporting Requirements, Cont'd.**

- (ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
  - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
  - (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
- (2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

**Liability**

- (1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
- (2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
- (3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
- (4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
- (5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
- (6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit.
- (7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

**Effect on Other Authorities**

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:

- (1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with

Sherman Ave Energy Center  
Facility (Source) Name (from STEP 1)

any other provision of the Act, including the provisions of title I of the Act relating

STEP 3, Cont'd.

**Effect on Other Authorities, Cont'd.**

to applicable National Ambient Air Quality Standards or State Implementation Plans;

(2) Limiting the number of allowances a source can hold; *provided*, that the number of allowances held by the source shall not affect the source's obligation to comply with any other provisions of the Act;

(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;

(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,

(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

STEP 4

Read the certification statement, sign, and date.

**Certification**

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name	Paul Ostberg	
Signature		Date 7/17/18



## State of New Jersey

CHRIS CHRISTIE  
*Governor*

DEPARTMENT of ENVIRONMENTAL PROTECTION

BOB MARTIN  
*Commissioner*

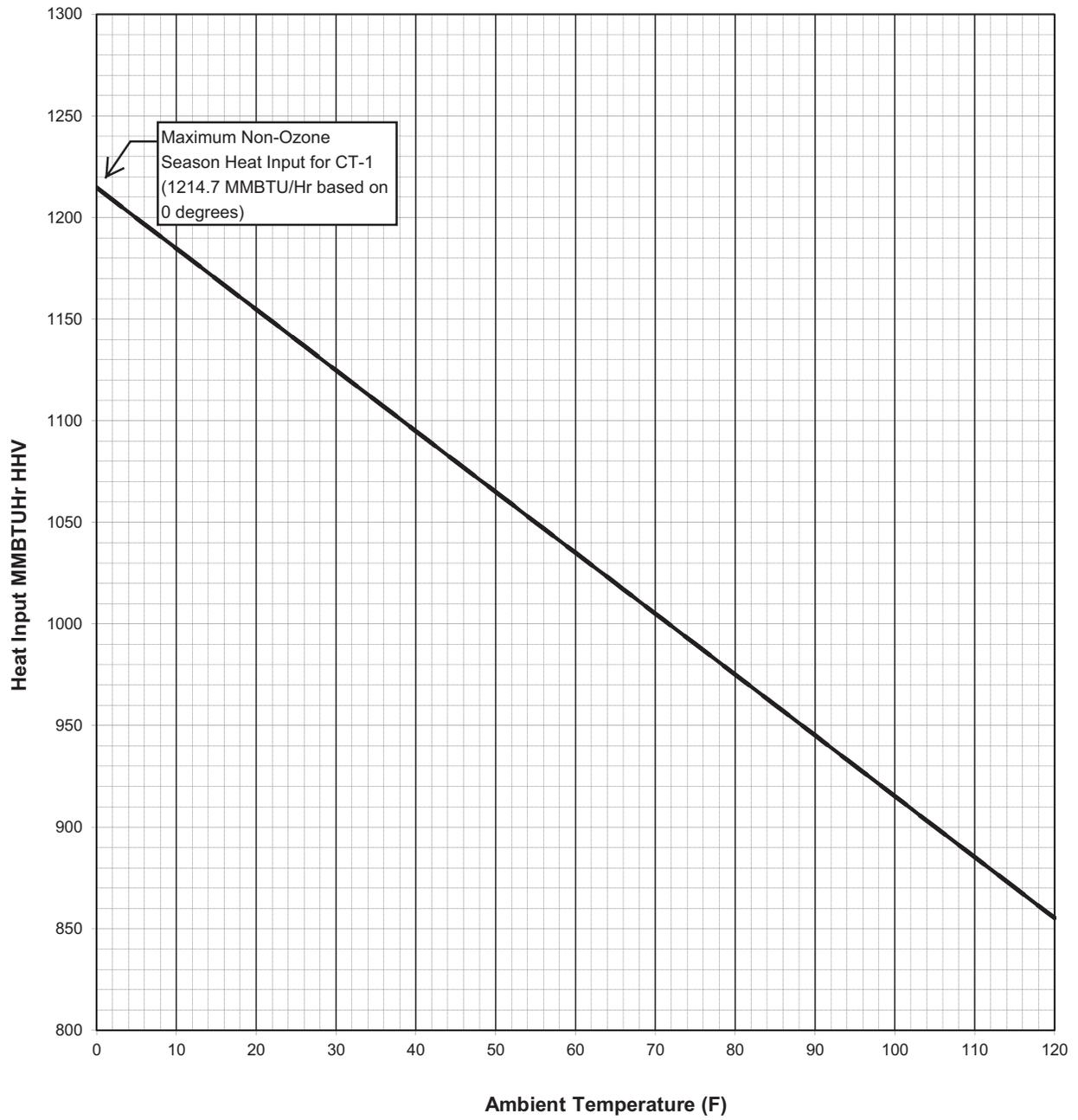
KIM GUADAGNO  
*Lt. Governor*

### Appendix III

## Ambient Temperature –vs- Heat Input Curves

This curve is to be used to determine the maximum heat input for Unit 1 during non-ozone season operation (U1, OS2 and U1, OS5).

**Sherman Ave Emission Unit 1**  
**Heat Input (MMBTU/Hr) vs. Ambient Temperature (F)**  
**While Combusting Natural Gas or Fuel Oil**



— • Heat Input at Peak