

**Division of Air Resources
Permit Review Report**

Permit ID: 9-0608-00053/00019
Renewal Number: 2
01/24/2022

Facility Identification Data

Name: SAMUEL A CARLSON GENERATING STATION
Address: 136 STEELE ST
JAMESTOWN, NY 14701-6438

Owner/Firm

Name: JAMESTOWN BOARD OF PUBLIC UTILITIES
Address: 92 STEELE ST
PO BOX 700
JAMESTOWN, NY 14701-0700, USA
Owner Classification: Municipal

Permit Contacts

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**Permit Description
Introduction**

The Title V operating air permit is intended to be a document containing only enforceable terms and conditions as well as any additional information, such as the identification of emission units, emission points, emission sources and processes, that makes the terms meaningful. 40 CFR Part 70.7(a)(5) requires that each Title V permit have an accompanying "...statement that sets forth the legal and factual basis for the draft permit conditions". The purpose for this permit review report is to satisfy the above requirement by providing pertinent details regarding the permit/application data and permit conditions in a more easily understandable format. This report will also include background narrative and explanations of regulatory decisions made by the reviewer. It should be emphasized that this permit review report, while based on information contained in the permit, is a separate document and is not itself an enforceable term and condition of the permit.

Summary Description of Proposed Project

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1. Permit conditions at the facility level are based on citations from 6 NYCRR Parts 200, 201, 202, 211 and 215 and are conditions that are in every Title V (five) operating permit. These conditions generally reiterate rules that apply to most facilities and some require the permittee to monitor or take actions.
2. Permit conditions that list 6 NYCRR Part 201-7.1 (Permits and Registrations, Federally Enforceable Emission Caps) contains federally enforceable emission capping conditions. The emission caps limit emissions below applicability thresholds for the listed emission units, emission points, or emission sources. Compliance with the emission caps are demonstrated by measuring actual emissions with continuous emission monitors on the gas turbine stacks or calculating emissions based on fuel use at other sources.
 - NOx emissions from boiler # 9 and #10 are each capped at 25 tpy to create NOx ERC's.
 - NOx, CO, and PM-10 emissions from the gas turbine, EP's 20 and 21, and the 23.3 MMBtu/hr boiler, EP 22, were capped when the gas turbine project was permitted in year 2000:
 - NOx emissions are capped at 5.0 ton/yr from U-00022 the small boiler and 160.0 ton/yr from the gas turbine, emission unit U-00020 on a 52-week rolling total basis. These caps, combined with 125.5 ton/yr of NOx emission reduction credits generated by curtailment of boilers #10 and #11 in emission unit U-00004 resulted in a net emission increase of NOx that is less than the 40 ton/yr significant net emission increase threshold found in both 6NYCRR 231-2 and 40 CFR 52.21.
 - CO emissions are capped at 8.7 ton/yr from the small boiler, emission unit U-00022, and to 90.0 ton/yr from the gas turbine, emission unit U-00020, on a 52-week rolling total basis. These caps resulted in a net emission increase of CO from the gas turbine project that is less than the 100 ton/yr significant net emission increase threshold for CO found in 40 CFR 52.21.
 - PM-10 emissions are limited to 0.8 ton/yr from the small boiler, emission unit U-00022, and 14.0 ton/yr from the gas turbine, emission unit U-00020, on a 52-week rolling total basis. These caps resulted in a net emission increase of PM-10 from the gas turbine project that is less than the 15 ton/yr significant net emission increase threshold for PM-10 found in 40 CFR 52.21.
3. This permit contains NOx emission caps for emission unit 00004, boilers #10 and #11, that were implemented in the 1999 to 2001 timeframe for the gas turbine addition project, emission unit #20. At the time NOx was capped at 145 tons per year from EU 00004 to create 125.0 tons of NOx Emission Reduction Credits (ERC's). Since then boiler #11 was shutdown. In 2014 the emissions from EU 00004 were further capped at 25 tons per year to create an additional 17.7 tons of NOx ERC's. Compliance with the 25-ton cap will demonstrate compliance with the 145 ton cap. The 145 cap was kept in the permit to document the earlier capping.
4. Permit conditions that list 6 NYCRR Part 225-1 (Fuel Composition and Use - sulfur limitations) as the applicable requirement regulate the sulfur content of the fuel oil burned by all sources at the plant. The sulfur content of each delivery of oil is evaluated for compliance. Part 225-1 limits the sulfur content of distillate oil to no more than 0.0015 percent by weight (15 ppm). This is the lowest sulfur content limit of all the applicable sulfur in oil requirements. Compliance with this limit will demonstrate compliance with other sulfur in oil limits.
5. Permit conditions that list 6 NYCRR Part 227-1 (Stationary Combustion Installations) as the applicable requirement regulates particulate and opacity emissions from combustion sources. Each boiler is included in the Part 227-1 opacity permit condition. If operational problems occur the facility is required to conduct visible emission observations as explained in the permit condition. A new particulate limit from Part 227-1 was added and is subject to boiler #9 while burning oil. The particulate emissions shall not exceed 0.10 pounds per million BTU.
6. Permit conditions that list 6 NYCRR Part 227-2 (Nitrogen Oxide Reasonably Available Control Technology, NOx RACT) as the applicable requirement specify what information must be recorded and submitted by the regulation. The NOx RACT emission limits apply to the boilers and the combined

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emissions of the LM6000 combustion gas turbine and duct burner. The Department approved a revised NOx RACT compliance plan in an October 23, 2014 letter:

Boiler #9 complies with NOx RACT by switching from coal to cleaner fuels, natural gas (primary fuel) and ultra-low sulfur distillate fuel oil (backup fuel). This is known as ‘fuel switching’. Boiler #9 NOx emissions are also capped at 25 tons per 52-week rolling total to ensure the fuel switching project meets the Insignificant Modification in New Source Review, 6 NYCRR Part 231-11.2.

Boiler #10 complies with NOx RACT by switching from coal to a cleaner fuel, natural gas. This is known as ‘fuel switching’. Boiler #10 NOx emissions are also capped at 25 tons per 52-week rolling total to ensure the fuel switching project meets the Insignificant Modification in New Source Review, 6 NYCRR Part 231-11.2.

The LM6000 combustion gas turbine has three NOx RACT limits:

- 35 ppmvd NOx @ 15% oxygen during combined cycle operation in the ozone season (May 1st through September 30th),
- 42 ppmvd NOx @ 15% oxygen during combined cycle operation in the non-ozone season (October 1st through April 30th), and
- 50 ppmvd NOx @ 15% oxygen whenever it is operating in simple cycle mode.

The 73.5 MMBtu natural gas boiler will comply with the presumptive 0.05 lb/MMBtu NOx limit. The 23.3 MMBtu/hr and 3.2 MMBtu/hr natural gas boilers will meet the presumptive RACT requirement for small boilers, an annual boiler tune-up.

7. 6 NYCRR Part 227-3, Ozone Season Oxides of Nitrogen (NOx) for Simple Cycle and Regenerative Combustion Turbines is a newer requirement that applies to the gas turbine when it operates in simple cycle mode during the ozone season (May 1 through September 30, annually). The facility will comply with the 100 ppm, corrected to 15% oxygen, NOx limit that becomes effective May 1, 2023 by complying with Subpart 227-2 NOx Reasonably Available Control Technology (RACT) limit of 50 ppm, corrected to 15% oxygen limit that they must already meet. In 2025 the Subpart 227-2 limit reduces to 25 ppm, corrected to 15 oxygen, and the facility expects to meet the lower limit with minor operating modifications.

8. Permit conditions that list 6 NYCRR 231-2 (New Source Review in Non-Attainment Areas and Ozone Transport Regions) as the applicable requirement document the use of emission reduction credits (ERC’s) for the gas turbine project that occurred between 1999 and 2001. 6 NYCRR Part 201-7 capping conditions and along with, Part 231-2, created ERC’s so the project was not subject to the modeling, emission control, and emission offsets requirements of Part 231-2 when the combustion gas turbine project, emission unit U-00020, was permitted and constructed. This condition created 125.0 tons of NOx emission reduction credits from emission unit 00004 by limiting emissions to 145.0 tons a year in year 2000. This permit, Renewal 2, Modification 0 (issued in 2019), includes a condition that limits NOx emissions from emission unit 00004 to 25.0 to create 10.1 tons of NOx ERCs. This condition was kept in the permit for historical purposes. Compliance with the 25 tpy cap demonstrates compliance with this permit condition.

9. The permit condition for 6 NYCRR 231-10 (New Source Review in Non-Attainment Areas and Ozone Transport Regions) as the applicable requirement, documents the creation of NOx emission reduction credits (ERC’s). The ERC’s were generated by switching from coal to natural gas and distillate fuel oil in boiler #9 and switching from coal to natural gas in boiler #10. The fuel switch was made to comply with the NOx RACT requirements of 6 NYCRR Part 227-2, as allowed by the fuel switching compliance option in 6 NYCRR 227-2.5(a). The NOx RACT limit for the new fuels, gas and oil, did not change, 0.20 pounds of NOx per million BTU, the presumptive RACT limit for pulverized coal. The potential to emit NOx from boiler #9 is 35.1 tons a year. The potential to emit NOx from boiler #10 is 42.7 tons a year. The facility accepted a 25 ton per year NOx emission cap on each boiler to create 10.1 tons of NOx ERC’s from boiler #9 and 17.7 tons of NOx ERC’s from boiler #10. The NOx PTE is now 25 tpy for each boiler.

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10. Permit conditions that list 6 NYCRR 242 (CO₂ Budget Trading Program) as the applicable requirement, track the emissions of carbon dioxide from the combustion gas turbine (EU U-00020), boiler #9 (EU U-00004) and boiler #10 (EU U-00003). Part 242 was revised, effective December 2020, to apply to any combustion unit, that any time on or after January 1, 2021, serves an electric generator with a nameplate capacity equal to or greater than 15 MWe that resides at a CO₂ Budget Source, per 6NYCRR 242-1.4(a)(2). Before this applicability change, the gas turbine was subject to Part 242, so the facility was already a CO₂ Budget Source. All CO₂ emissions from the gas turbine while operating in combined cycle (includes duct burner emissions) must comply with Part 242.

11. The permit includes requirements from EPA's Cross State Air Pollution Rule (CSAPR) which regulates emissions of NO_x and SO₂. The requirements of the Clean Air Interstate Rule (CAIR), which were contained in 6 NYCRR Parts 243, 244 and 245, have been replaced by the Cross-State Air Pollution Rule (CSAPR). Requirements for the CSAPR program are in the permit conditions for 40 CFR Part 97, subparts AAAAA, CCCCC and GGGGG. This change does not affect the reporting requirements for the facility. CSAPR only applies to the emissions from the combustion gas turbine, emission unit U-00020.

12. The requirements from 6 NYCRR 246, Mercury Reduction Program for Coal-Fired Electric Utility Steam Generating Unit do not apply to the facility since it stopped burning coal. Part 246 was not carried over into this permit renewal.

13. 6 NYCRR Part 251, CO₂ Performance Standards for Major Electric Generating Facilities, was added to the permit after the applicability was revised. It applies to boilers #9 and #10, as well as the gas turbine. All three are considered 'non-modified existing sources' and will meet the input-based CO₂ limit for each source.

14. Permit conditions that list 40 CFR 60 subpart A (New Source Performance Standards (NSPS) - General Provisions) as the applicable requirement, requires the facility to comply with notification, monitoring, record keeping, and reporting requirements of all applicable NSPS requirements.

15. Permit conditions that list 40 CFR 60 subpart Db (New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units, 100 to 250 million Btu per hour) as the applicable regulation apply only to the duct burner associated with the gas turbine. Subpart Db limits the emissions of nitrogen oxide (NO_x). The permittee elected to use the continuous emission monitoring system on the combined cycle stack to demonstrate compliance. The combined cycle stack is EP 00021. The duct burner only burns natural gas, so it is only subject to the NO_x requirements and fuel monitoring requirements.

16. Permit conditions that list 40 CFR 60 subpart Dc (New Source Performance Standards (NSPS) (New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units, 10 to 100 million Btu per hour) as the applicable regulation, requires the small natural gas boiler (EU 00022, 23.3 MMBtu/hr) and the midsize natural gas package boiler (EU 00027, 73.5 MMBtu/hr) to monitor and record daily fuel consumption.

17. The combustion gas turbine is subject to 40 CFR 60 subpart GG (New Source Performance Standards for Stationary Gas Turbines) which limits the emissions of sulfur dioxide (SO₂), nitrogen oxide (NO_x), and opacity. The record keeping and monitoring requirements are prescribed by the regulation.

The permittee requested not to monitor the sulfur content of the natural gas fired in the LM6000 combustion gas turbine as allowed in 40 CFR 60.334(h)(3). Analytical results were submitted with a July 25, 2006 letter to support this request. The permittee does not use the nitrogen content of the natural gas to calculate the NO_x emission limit in 40 CFR Part 60 subpart GG, so the facility is not required to measure the nitrogen content of natural gas for subpart GG purposes.

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18. Permit conditions that list 40 CFR Part 63 subpart JJJJJ (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources [40 CFR Part 63.11193, subpart JJJJJ (6J's)], as the applicable regulation sets requirements to minimize emissions from boiler #9. The regulation specifies tune-ups, monitoring, recordkeeping and reporting. Subpart JJJJJ only applies to boiler #9 because it fires distillate oil as a backup fuel. Subpart JJJJJ does not apply to boilers that only burn natural gas. Boiler #9 is considered an existing oil-fired boiler. When the permittee was burning coal, it was a major source of hazardous air pollutants. Since the permittee no longer burns coal the facility is an Area Source of HAP's, as confirmed in a September 16, 2014 letter from EPA to Jamestown Board of Public Utilities. Boiler #9 was subject to a one-time energy assessment which was performed

19. The requirements from 40 CFR 64, Continuous Assurance Monitoring (CAM) were not carried into this permit because the facility stopped burning coal in the boilers. The current potential pre-control device emissions from boilers #9 or #10 don't exceed major source thresholds.

Attainment Status

SAMUEL A CARLSON GENERATING STATION is located in the town of JAMESTOWN in the county of CHAUTAUQUA.

The attainment status for this location is provided below. (Areas classified as attainment are those that meet all ambient air quality standards for a designated criteria air pollutant.)

| Criteria Pollutant | Attainment Status |
|---|-----------------------------------|
| Particulate Matter (PM) | ATTAINMENT |
| Particulate Matter < 10µ in diameter (PM10) | ATTAINMENT |
| Sulfur Dioxide (SO2) | ATTAINMENT |
| Ozone* | TRANSPORT REGION (NON-ATTAINMENT) |
| Oxides of Nitrogen (NOx)** | ATTAINMENT |
| Carbon Monoxide (CO) | ATTAINMENT |

* Ozone is regulated in terms of the emissions of volatile organic compounds (VOC) and/or oxides of nitrogen (NOx) which are ozone precursors.

** NOx has a separate ambient air quality standard in addition to being an ozone precursor.

Facility Description:

The Samuel A. Carlson Steam Generating Station is owned and operated by the Jamestown Board of Public Utilities (BPU). It is a municipal electric power generating plant with applicable SIC code 4911, Electrical Services. The facility is located at 136 Steele Street, in the City of Jamestown, Chautauqua

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County. The facility operates a large natural gas boiler with distillate oil back up (boiler #9), a large natural gas boiler (boiler #10), a LM6000 natural gas combustion gas turbine with a duct burner and a heat recovery steam generator (HRSG), a 73.5 million Btu (MMBtu) natural gas boiler (boiler #27), a 23.3 MMBtu natural gas boiler (boiler #22), a very small natural gas boiler (boiler #28), an emergency diesel engine generator set, and two mechanical draft cooling towers. The large combustion gas turbine can operate in simple or combined cycle mode. The gas turbine generator is rated at 43 MW. The large natural gas boiler, large gas and oil boiler and HRSG provide steam to a common header which can feed either one or both of the steam turbine electric generators. The steam turbine generators are each rated at 24.5 megawatts (MW).

Coal fired boiler #11 was permanently shut down effective January 1, 2012. Boiler #12 was permanently shut down on December 31, 2013 in order to be exempt from the requirements of Best Available Retrofit Technology (BART).

Permit Structure and Description of Operations

The Title V permit for SAMUEL A CARLSON GENERATING STATION

is structured in terms of the following hierarchy: facility, emission unit, emission point, emission source and process. A facility is defined as all emission sources located at one or more adjacent or contiguous properties owned or operated by the same person or persons under common control. The facility is subdivided into one or more emission units (EU). Emission units are defined as any part or activity of a stationary facility that emits or has the potential to emit any federal or state regulated air pollutant. An emission unit is represented as a grouping of processes (defined as any activity involving one or more emission sources (ES) that emits or has the potential to emit any federal or state regulated air pollutant). An emission source is defined as any apparatus, contrivance or machine capable of causing emissions of any air contaminant to the outdoor atmosphere, including any appurtenant exhaust system or air cleaning device. [NOTE: Indirect sources of air contamination as defined in 6 NYCRR Part 203 (i.e. parking lots) are excluded from this definition]. The applicant is required to identify the principal piece of equipment (i.e., emission source) that directly results in or controls the emission of federal or state regulated air pollutants from an activity (i.e., process). Emission sources are categorized by the following types:

- combustion - devices which burn fuel to generate heat, steam or power
- incinerator - devices which burn waste material for disposal
- control - emission control devices
- process - any device or contrivance which may emit air contaminants that is not included in the above categories.

SAMUEL A CARLSON GENERATING STATION is defined by the following emission unit(s):

Emission unit U00004 - This emission unit was created for emission point 4. One natural gas fired boiler (commonly known as boiler #10) emits to stack EP 00004, also known as the South Stack. This boiler is designated as large boiler and has a nominal heat input rate of 198 mmBtu/hr. The boiler fires natural gas only as described in process 10G. Low NOx burners and flue gas recirculation are used to minimize NOx emissions.

Emission unit 4 consists of emission point 00004 (the south stack), emission source/control 00007 (boiler #10), emission source/control LNB10 (low NOx burners), and emission source/control FGR10 (flue gas recirculation). Emission source/control 00009 (the electrostatic precipitator (ESP) for boiler #10) is no longer used because the boiler was converted from coal to natural gas and, as such, the ESP was retired and removed from the permit. The ESP was removed in 2017.

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Emission unit U00004 is associated with the following emission points (EP):

00004

Process: 10G is located at OP FLOOR, Building SA CARLSON - Firing natural gas in one wall fired boiler (#10) that exhausts through stack (emission point) 00004. Low NO_x burners and flue gas recirculation control NO_x emissions from the boiler. Boiler #10 is classified as a large boiler. This boiler will use Part 75 Low Mass Emission (LME) methodology to estimate SO₂, NO_x and CO₂ mass emissions, NO_x emission rate (lb/MMBtu), and unit heat input instead of a Part 75 continuous emissions monitoring system (CEMS) as allowed by 40 CFR 75.19.

Emission unit U00020 - This emission unit consists of a GE LM6000 combustion gas turbine generator system and a Deltak heat recovery steam generator (HRSG). The turbine is natural gas-fired and has a nominal capacity of 43 MW at a heat input of 430 mmBtu/hr (HHV). The HRSG has natural gas supplemental firing (duct burners) rated at approximately 144 mmBtu/hr. During simple cycle operation, defined as when the combustion turbine is operating (including startup and shutdown) and the duct burner is not operating, the turbine exhausts directly to EP 00020 or to EP 00021. During combined cycle operation, defined as when both the combustion turbine and duct burner are operating, the turbine exhausts through the HRSG to EP 00021. A low pressure SPRINT (SPRAY INTERcooling) system and an Enhanced Flow System (EFS) were installed on the LM6000 gas turbine in 2005 to improve the efficiency and output of the system.

Emission unit U00020 is associated with the following emission points (EP):

00020, 00021

Process: DB1 is located at GROUND, Building SA CARLSON - This process is the exclusive firing of the duct burner using natural gas. (This process is not actually possible since the duct burner cannot fire without the turbine. The process was defined because 40 CFR 60 subpart Db applies to the duct burner only.)

Process: GT1 is located at GROUND, Building SA CARLSON - This process is a GE LM6000 gas turbine and Deltak HRSG with supplemental firing of a duct burner, with both the turbine and duct burner firing natural gas. NO_x from the turbine is controlled by water injection.

Process: GT2 is located at GROUND, Building SA CARLSON - This process is the GE LM6000 combustion gas turbine only, firing natural gas. NO_x from the turbine is controlled by water injection. The duct burner is not operating.

Emission unit U00022 - This emission unit consists of a 23.3 mmBtu/hr natural gas-fired boiler manufactured by Cleaver Brooks. This boiler supplements the district heating requirements. This boiler emits to EP 00022.

Emission unit U00022 is associated with the following emission points (EP):

00022

Process: 010 is located at GROUND, Building SA CARLSON - This process is a 23.3 mmBtu/hr boiler firing natural gas.

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Emission unit U00027 - This emission unit is a nominal 73.5 MMBtu/hr package boiler. The boiler is fired using natural gas as its only fuel. It is one of the emission units that can be operated to provide hot water to the district heating system. This exhausts through emission point 00027.

Emission unit U00027 is associated with the following emission points (EP):
00027

Process: GAS is located at Building PB Bldg - This emission unit is a package boiler with a fuel input rate of 73.5 MMBtu/hr that operates to produce hot water for the district heating service. The boiler is natural gas fired with low NOx burners and is operated up to 8760 hours per year.

Emission unit U00028 - This emission unit is an 80 horsepower low pressure steam boiler with a nominal heat input rate of 3.2 MMBtu/hr. This is referred to as the DA (deaeration) Tank steam boiler. The boiler is fired using natural gas as its only fuel. This boiler exhausts through emission point 00028.

Emission unit U00028 is associated with the following emission points (EP):
00028

Process: 28G is located at Building SA CARLSON - This process involves the combustion of natural gas in the DA (deaeration) Tank steam boiler.

Emission unit EI0001 - A Detroit Diesel recipricating internal combustion engine that powers a 500 kW emergency generator. This engine is exempt from permitting, but subject to EPA's recipricating internal combustion engine NESHAP, 40 CFR 63 subpart ZZZZ.

Process: GEN is located at Building SA CARLSON - A 840 hp Detroit Diesel engine powers a 480 kW emergency generator.

Emission unit U00003 - Emission Unit U00003 contains boiler #9 which fires natural gas as the primary fuel (rated at 198 MMBtu/hr) and distillate oil as the back-up fuel (rated at 100 MMBtu/hr). Boiler #9 exhausts to emission point 00003 (North Stack). Boiler #9 was converted from coal to natural gas as the primary fuel and distillate oil as the secondary fuel to comply with NOx RACT (fuel switching). This is described in process 09G and 09O. Boiler #9 is no longer capable of burning coal. Low NOx burners and flue gas recirculation are used to minimize NOx emissions. Boiler #12 was part of emission unit U00003 but was retired on December 30, 2013 and demolished in 2017.

Emission Unit 00003 consists of emission point 00003 (the North Stack), emission source 00001 (boiler #9), emission source/control LNB09 (low NOx burners), and emission source/control FGR09 (flue gas recirculation). Emission source/control 00003 (the electrostatic precipitator for boiler #9) is no longer used because the boiler was converted to natural gas/distillate oil and was removed in 2017.

Emission unit U00003 is associated with the following emission points (EP):
00003

Process: 09G is located at OP Floor, Building SA CARLSON - Firing natural gas/distillate oil in one wall fired boiler (#9) that exhausts through stack EP00003. Low NOx burners and flue gas recirculation minimize NOx emissions from the boiler. Boiler #9 is classified as a large boiler. This boiler will use Part

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75 Low Mass Emission (LME) methodology to estimate SO₂, NO_x and CO₂ mass emissions, NO_x emission rate (lb/MMBtu), and unit heat input instead of a Part 75 continuous emissions monitoring system (CEMS) as allowed by 40 CFR 75.19.

Process: 090 is located at OP Floor, Building SA CARLSON - Firing distillate oil in a boiler #9, a one wall fired boiler that exhausts through stack EP00003. While burning oil the rated heat input is 100 MMBtu/hr. Low NO_x burners and flue gas recirculation minimize NO_x emissions from the boiler. Boiler #9 is classified as a large boiler. This boiler will use Part 75 Low Mass Emission (LME) methodology to estimate SO₂, NO_x and CO₂ mass emissions, NO_x emission rate (lb/MMBtu), and unit heat input instead of a Part 75 continuous emissions monitoring system (CEMS) as allowed by 40 CFR 75.19.

The rated heat input from oil, 100 MMBtu/hr, is less than the rated heat input for natural gas, 198 MMBtu/hr, because the facility had to choose an oil burner that could operate in the lower half or upper half of the boiler heat capacity. A burner for the lower heat range was selected, that way the unit could start up on oil. If a burner for the upper heat range was selected the unit could not start on oil.

Title V/Major Source Status

SAMUEL A CARLSON GENERATING STATION is subject to Title V requirements. This determination is based on the following information:

This is a major facility because it actually emits more than 100 tons per year (tpy) nitrogen oxides, carbon monoxide, and 100,000 tpy of greenhouse gases as carbon dioxide equivalents. The actual emissions of total hazardous air pollutants are less than the major facility threshold of 25 tons per year. Each individual hazardous air pollutant is less than the major facility threshold of 10 tons per year. Since coal was removed, the potential emissions of sulfur dioxide, particulate matter, and particulate matter less than 10 microns in aerodynamic diameter (PM-10) are less than 100 tpy, their major source thresholds.

Program Applicability

The following chart summarizes the applicability of SAMUEL A CARLSON GENERATING STATION with regards to the principal air pollution regulatory programs:

| Regulatory Program | Applicability |
|--------------------------------|----------------------|
| PSD | NO |
| NSR (non-attainment) | YES |
| NESHAP (40 CFR Part 61) | NO |
| NESHAP (MACT - 40 CFR Part 63) | YES |
| NSPS | YES |
| TITLE IV | YES |
| TITLE V | YES |
| TITLE VI | NO |
| RACT | YES |
| SIP | YES |

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NOTES:

PSD Prevention of Significant Deterioration (40 CFR 52, 6 NYCRR 231-7, 231-8) - requirements which pertain to major stationary sources located in areas which are in attainment of National Ambient Air Quality Standards (NAAQS) for specified pollutants.

NSR New Source Review (6 NYCRR 231-5, 231-6) - requirements which pertain to major stationary sources located in areas which are in non-attainment of National Ambient Air Quality Standards (NAAQS) for specified pollutants.

NESHAP National Emission Standards for Hazardous Air Pollutants (40 CFR 61, 6 NYCRR 200.10) - contaminant and source specific emission standards established prior to the Clean Air Act Amendments of 1990 (CAAA) which were developed for 9 air contaminants (inorganic arsenic, radon, benzene, vinyl chloride, asbestos, mercury, beryllium, radionuclides, and volatile HAP's).

MACT Maximum Achievable Control Technology (40 CFR 63, 6 NYCRR 200.10) - contaminant and source specific emission standards established by the 1990 CAAA. Under Section 112 of the CAAA, the US EPA is required to develop and promulgate emissions standards for new and existing sources. The standards are to be based on the best demonstrated control technology and practices in the regulated industry, otherwise known as MACT. The corresponding regulations apply to specific source types and contaminants.

NSPS New Source Performance Standards (40 CFR 60, 6 NYCRR 200.10) - standards of performance for specific stationary source categories developed by the US EPA under Section 111 of the CAAA. The standards apply only to those stationary sources which have been constructed or modified after the regulations have been proposed by publication in the Federal Register and only to the specific contaminant(s) listed in the regulation.

Title IV Acid Rain Control Program (40 CFR 72 thru 78, 6 NYCRR 201-6) - regulations which mandate the implementation of the acid rain control program for large stationary combustion facilities.

Title VI Stratospheric Ozone Protection (40 CFR 82, Subpart A thru G, 6 NYCRR 200.10) - federal requirements that apply to sources which use a minimum quantity of CFC's (chlorofluorocarbons), HCFC's (hydrofluorocarbons) or other ozone depleting substances or regulated substitute substances in equipment such as air conditioners, refrigeration equipment or motor vehicle air conditioners or appliances.

RACT Reasonably Available Control Technology (6 NYCRR Parts 212-3, 220-1.6, 220-1.7, 220-2.3, 220-2.4, 226, 227-2, 228, 229, 230, 233, 234, 235, 236) - the lowest emission limit that a specific source is capable of meeting by application of control technology that is reasonably available, considering technological and economic feasibility. RACT is a control strategy used to limit emissions of VOC's and NOx for the purpose of attaining the air quality standard for ozone. The term as it is used in the above table refers to those state air pollution control regulations which specifically regulate VOC and NOx emissions.

SIP State Implementation Plan (40 CFR 52, Subpart HH, 6 NYCRR 200.10) - as per the CAAA, all states are empowered and required to devise the specific combination of controls that, when implemented, will bring about attainment of ambient air quality standards established by the federal government and the individual state. This specific combination of measures is referred to as the SIP. The term here refers to those state regulations that are approved to be included in the SIP and thus are considered federally enforceable.

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Compliance Status

Facility is in compliance with all requirements.

SIC Codes

SIC or Standard Industrial Classification code is an industrial code developed by the federal Office of Management and Budget for use, among other things, in the classification of establishments by the type of activity in which they are engaged. Each operating establishment is assigned an industry code on the basis of its primary activity, which is determined by its principal product or group of products produced or distributed, or services rendered. Larger facilities typically have more than one SIC code.

| SIC Code | Description |
|----------|-------------------|
| 4911 | ELECTRIC SERVICES |

SCC Codes

SCC or Source Classification Code is a code developed and used" by the USEPA to categorize processes which result in air emissions for the purpose of assessing emission factor information.Each SCC represents a unique process or function within a source category logically associated with a point of air pollution emissions. Any operation that causes air pollution can be represented by one or more SCC's.

| SCC Code | Description |
|-------------|--|
| 1-01-006-01 | EXTERNAL COMBUSTION BOILERS - ELECTRIC GENERATION |
| 1-02-006-02 | ELECTRIC UTILITY BOILER - NATURAL GAS Boilers > 100 MBtu/Hr except Tangential EXTERNAL COMBUSTION BOILERS - INDUSTRIAL INDUSTRIAL BOILER - NATURAL GAS 10-100 MMBtu/Hr |
| 1-02-006-03 | EXTERNAL COMBUSTION BOILERS - INDUSTRIAL INDUSTRIAL BOILER - NATURAL GAS Less Than 10 MMBtu/Hr |
| 2-02-001-02 | INTERNAL COMBUSTION ENGINES - INDUSTRIAL INDUSTRIAL INTERNAL COMBUSTION ENGINE - DISTILLATE OIL(DIESEL) |
| 2-02-002-03 | Reciprocating INDUSTRIAL INTERNAL COMBUSTION ENGINE - NATURAL GAS Turbine: Cogeneration |

Facility Emissions Summary

In the following table, the CAS No. or Chemical Abstract Service code is an identifier assigned to every chemical compound. [NOTE: Certain CAS No.'s contain a 'NY' designation within them. These are not true CAS No.'s but rather an identification which has been developed by the department to identify groups of contaminants which ordinary CAS No.'s do not do. As an example, volatile organic compounds or VOC's are identified collectively by the NY CAS No. 0NY998-00-0.] The PTE refers to the Potential to Emit. This is defined as the maximum capacity of a facility or air contaminant source to emit any air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or air contamination source to emit any air contaminant , including air pollution control equipment and/or restrictions on the hours of operation, or on the type or amount or material combusted, stored, or processed, shall be treated as part of the design only if the limitation is contained in federally enforceable permit conditions. The PTE for each contaminant that is displayed represents the

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facility-wide PTE in tons per year (tpy) or pounds per year (lbs/yr). In some instances the PTE represents a federally enforceable emissions cap or limitation for that contaminant. The term ‘HAP’ refers to any of the hazardous air pollutants listed in section 112(b) of the Clean Air Act Amendments of 1990. Total emissions of all hazardous air pollutants are listed under the special NY CAS No. 0NY100-00-0. In addition, each individual hazardous air pollutant is also listed under its own specific CAS No. and is identified in the list below by the (HAP) designation.

| Cas No. | Contaminant | PTE lbs/yr | PTE tons/yr | Actual lbs/yr | Actual tons/yr |
|-------------|--|------------|-------------|---------------|----------------|
| 003268-87-9 | 1, 2, 3, 4, 6, 7, 8, 9- OCTACHLORODIB ENZODIOXIN | | 1.85E-8 | | |
| 000106-99-0 | 1, 3-BUTADIENE | | 0.00081 | | |
| 000075-07-0 | ACETALDEHYDE | | 0.0754 | | |
| 000107-02-8 | ACROLEIN | | 0.0121 | | |
| 007440-38-2 | ARSENIC | | 0.00374 | | |
| 000071-43-2 | BENZENE | | 0.0296 | | |
| 007440-41-7 | BERYLLIUM | | 0.00255 | | |
| 007440-43-9 | CADMIUM | | 0.00461 | | |
| 000124-38-9 | CARBON DIOXIDE | | 584163 | | |
| 0NY750-00-0 | CARBON DIOXIDE EQUIVALENTS | | 550970 | | |
| 000630-08-0 | CARBON MONOXIDE | 520300 | | | |
| 007440-47-3 | CHROMIUM | | 0.00518 | | |
| 018540-29-9 | CHROMIUM (VI) | | 0.00252 | | |
| 007440-48-4 | COBALT | | 0.000231 | | |
| 025321-22-6 | DICHLOROBENZE NE | | 0.0033 | | |
| 000071-55-6 | ETHANE, 1, 1, 1- TRICHLORO | | 0.00141 | | |
| 000100-41-4 | ETHYLBENZENE | | 0.0606 | | |
| 000050-00-0 | FORMALDEHYDE | | 1.68 | | |
| 000110-54-3 | HEXANE | | 4.95 | | |
| 007439-92-1 | LEAD | | 0.00852 | | |
| 007439-96-5 | MANGANESE | | 0.00577 | | |
| 007439-97-6 | MERCURY | | 0.00302 | | |
| 000074-82-8 | METHANE | | 11.33 | | |
| 000091-20-3 | NAPHTHALENE | | 0.0106 | | |
| 007440-02-0 | NICKEL METAL AND INSOLUBLE COMPOUNDS | | 0.00651 | | |
| 010024-97-2 | NITROUS OXIDE | | 1.42 | | |
| 0NY210-00-0 | OXIDES OF NITROGEN | 475200 | | | |
| 0NY075-00-0 | PARTICULATES | | 13.5 | | |
| 0NY075-02-5 | PM 2.5 | 60640 | | | |
| 0NY075-00-5 | PM-10 | 62000 | | | |
| 130498-29-2 | POLYCYCLIC AROMATIC HYDROCARBONS | | 0.00448 | | |
| 0NY505-00-0 | POLYCYCLIC ORGANIC MATTER (POM) | | 0.000529 | | |
| 000075-56-9 | PROPANE, 1, 2- EPOXY- | | 0.0546 | | |
| 007782-49-2 | SELENIUM | | 0.0127 | | |
| 007446-09-5 | SULFUR DIOXIDE | | 8.21 | | |

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| | | |
|-------------|---------------------------|-------|
| 000108-88-3 | TOLUENE | 0.289 |
| 0NY100-00-0 | TOTAL HAP | 7.2 |
| 0NY998-00-0 | VOC | 19.2 |
| 001330-20-7 | XYLENE, M, O & P MIXT. | 0.121 |

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

Item A: Public Access to Recordkeeping for Title V Facilities - 6 NYCRR 201-1.10(b)

The Department will make available to the public any permit application, compliance plan, permit, and monitoring and compliance certification report pursuant to Section 503(e) of the Act, except for information entitled to confidential treatment pursuant to 6 NYCRR Part 616 - Public Access to records and Section 114(c) of the Act.

Item B: Timely Application for the Renewal of Title V Permits -6 NYCRR Part 201-6.2(a)(4)

Owners and/or operators of facilities having an issued Title V permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit expiration for permit renewal purposes.

Item C: Certification by a Responsible Official - 6 NYCRR Part 201-6.2(d)(12)

Any application, form, report or compliance certification required to be submitted pursuant to the federally enforceable portions of this permit shall contain a certification of truth, accuracy and completeness by a responsible official. This certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Item D: Requirement to Comply With All Conditions - 6 NYCRR Part 201-6.4(a)(2)

The permittee must comply with all conditions of the Title V facility permit. Any permit non-compliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

Item E: Permit Revocation, Modification, Reopening, Reissuance or Termination, and Associated Information Submission Requirements - 6 NYCRR Part 201-6.4(a)(3)

This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Item F: Cessation or Reduction of Permitted Activity Not a Defense - 6 NYCRR 201-6.4(a)(5)

It shall not be a defense for a permittee in an enforcement action to claim that a cessation or reduction in the permitted activity would have been necessary in order to maintain compliance with the conditions of this permit.

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Item G: Property Rights - 6 NYCRR 201-6.4(a)(6)

This permit does not convey any property rights of any sort or any exclusive privilege.

Item H: Severability - 6 NYCRR Part 201-6.4(a)(9)

If any provisions, parts or conditions of this permit are found to be invalid or are the subject of a challenge, the remainder of this permit shall continue to be valid.

Item I: Permit Shield - 6 NYCRR Part 201-6.4(g)

All permittees granted a Title V facility permit shall be covered under the protection of a permit shield, except as provided under 6 NYCRR Subpart 201-6. Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that such applicable requirements are included and are specifically identified in the permit, or the Department, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the major stationary source, and the permit includes the determination or a concise summary thereof. Nothing herein shall preclude the Department from revising or revoking the permit pursuant to 6 NYCRR Part 621 or from exercising its summary abatement authority. Nothing in this permit shall alter or affect the following:

- i. The ability of the Department to seek to bring suit on behalf of the State of New York, or the Administrator to seek to bring suit on behalf of the United States, to immediately restrain any person causing or contributing to pollution presenting an imminent and substantial endangerment to public health, welfare or the environment to stop the emission of air pollutants causing or contributing to such pollution;
- ii. The liability of a permittee of the Title V facility for any violation of applicable requirements prior to or at the time of permit issuance;
- iii. The applicable requirements of Title IV of the Act;
- iv. The ability of the Department or the Administrator to obtain information from the permittee concerning the ability to enter, inspect and monitor the facility.

Item J: Reopening for Cause - 6 NYCRR Part 201-6.4(i)

This Title V permit shall be reopened and revised under any of the following circumstances:

- i. If additional applicable requirements under the Act become applicable where this permit's remaining term is three or more years, a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which this permit is due to expire, unless the original permit or any of its terms and conditions has been extended by the Department pursuant to the provisions of Part 201-6.7 and Part 621.
- ii. The Department or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
- iii. The Department or the Administrator determines that the Title V permit

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must be revised or reopened to assure compliance with applicable requirements.

iv. If the permitted facility is an "affected source" subject to the requirements of Title IV of the Act, and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

Proceedings to reopen and issue Title V facility permits shall follow the same procedures as apply to initial permit issuance but shall affect only those parts of the permit for which cause to reopen exists.

Reopenings shall not be initiated before a notice of such intent is provided to the facility by the Department at least thirty days in advance of the date that the permit is to be reopened, except that the Department may provide a shorter time period in the case of an emergency.

Item K: Permit Exclusion - ECL 19-0305

The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item L: Federally Enforceable Requirements - 40 CFR 70.6(b)

All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

Item A: Emergency Defense - 6 NYCRR 201-1.5

An emergency, as defined by subpart 201-2, constitutes an affirmative defense to penalties sought in an enforcement action brought by the Department for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

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- (1) An emergency occurred and that the facility owner or operator can identify the cause(s) of the emergency;
- (2) The equipment at the permitted facility causing the emergency was at the time being properly operated and maintained;
- (3) During the period of the emergency the facility owner or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
- (4) The facility owner or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement. item_02

**Item B: General Provisions for State Enforceable Permit Terms and Condition - 6
NYCRR Part 201-5**

Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Regulatory Analysis

| Location Facility/EU/EP/Process/ES | Regulation | Condition | Short Description |
|---|-------------------|------------------|---|
| --- | | | |
| FACILITY | ECL 19-0301 | 84 | Powers and Duties of the Department with respect to air pollution control |
| FACILITY | 40CFR 60-A | 35 | General provisions |
| FACILITY | 40CFR 60-A.11 (d) | 40 | General provisions - compliance with standards and maintenance requirements |
| FACILITY | 40CFR 60-A.12 | 41 | General provisions - |

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| | | | |
|---------------|-------------------------------|----|---|
| FACILITY | 40CFR 60-A.13 (a) | 42 | Circumvention General provisions - Monitoring requirements |
| FACILITY | 40CFR 60-A.13 (d) | 43 | General provisions - Monitoring requirements |
| FACILITY | 40CFR 60-A.13 (e) | 44 | General provisions - Monitoring requirements |
| FACILITY | 40CFR 60-A.13 (h) | 45 | General provisions - Monitoring requirements |
| FACILITY | 40CFR 60-A.4 | 36 | General provisions - Address |
| FACILITY | 40CFR 60-A.7 (a) | 37 | Notification and Recordkeeping |
| FACILITY | 40CFR 60-A.7 (b) | 38 | Notification and Recordkeeping |
| FACILITY | 40CFR 60-A.7 (f) | 39 | Notification and Recordkeeping |
| U-00020/-/DB1 | 40CFR 60-Db.44b (1) (1) | 72 | Standards for Nitrogen Oxides (firing coal, oil, natural gas or a mixture of all). |
| U-00020/-/DB1 | 40CFR 60-Db.49b (d) | 73 | Reporting and Recordkeeping Requirements. |
| FACILITY | 40CFR 60-Dc.48c (g) | 46 | Reporting and Recordkeeping Requirements. |
| U-00020 | 40CFR 60-GG.332 (a) (1) | 68 | Standard for Oxides of nitrogen for Gas Turbines > 100 mmBTU/hr |
| U-00020 | 40CFR 60-GG.332 (f) | 69 | Exemption from Section 332(a) of this Subpart. |
| FACILITY | 40CFR 63- JJJJJJ.11210 (i) | 47 | ICI Boiler Area Source NESHAP - Physical Change to Boiler |
| U-00003 | 40CFR 63- JJJJJJ.11223 (c) | 54 | ICI Boiler Area Source NESHAP - Oxygen Trim System |
| U-00003 | 40CFR 63- JJJJJJ.11225 (b) | 55 | ICI Boiler Area Source NESHAP - Annual Compliance Certification Report |
| U-00003/00003 | 40CFR 63- JJJJJJ.11225 (c) | 58 | ICI Boiler Area Source NESHAP - Records |
| FACILITY | 40CFR 63-ZZZZ.6603 (a) | 48 | Reciprocating Internal Combustion Engine (RICE) NESHAP - requirements for existing engines at area sources of HAP emissions |
| FACILITY | 40CFR 68 | 18 | Chemical accident prevention provisions |
| FACILITY | 40CFR 72 | 49 | Permits regulation |
| FACILITY | 40CFR 82-F | 19 | Protection of Stratospheric Ozone - |

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|----------|-----------------------------|------------|--|
| U-00020 | 40CFR 97-AAAAA.406 | 70 | recycling and emissions reduction |
| | | | Transport Rule (TR) |
| | | | NOx Annual Trading Program Standard |
| | | | Requirments |
| U-00020 | 40CFR 97-CCCCC.606 | 71 | Transport Rule (TR) |
| | | | SO2 Group 1 Trading Program Standard |
| | | | Requirments |
| FACILITY | 40CFR 97-GGGGG.1006 | 50 | CSAPR NOx Ozone Season Group 3 Trading Program Standard Requirements |
| FACILITY | 6NYCRR 200.6 | 1 | Acceptable ambient air quality. |
| FACILITY | 6NYCRR 200.7 | 10 | Maintenance of equipment. |
| FACILITY | 6NYCRR 201-1.4 | 85 | Unavoidable noncompliance and violations |
| FACILITY | 6NYCRR 201-1.7 | 11 | Recycling and Salvage |
| FACILITY | 6NYCRR 201-1.8 | 12 | Prohibition of reintroduction of collected contaminants to the air |
| FACILITY | 6NYCRR 201-3.2 (a) | 13 | Exempt Activities - Proof of eligibility |
| FACILITY | 6NYCRR 201-3.2 (b) | 20 | Exempt Activities - maintenance of control equipment |
| FACILITY | 6NYCRR 201-3.3 (a) | 14 | Trivial Activities - proof of eligibility |
| FACILITY | 6NYCRR 201-3.3 (b) | 21 | Trivial Activities - maintenance of control equipment |
| FACILITY | 6NYCRR 201-6 | 22, 51, 52 | Title V Permits and the Associated Permit Conditions |
| FACILITY | 6NYCRR 201-6.4 (a) (4) | 15 | General Conditions - Requirement to Provide Information |
| FACILITY | 6NYCRR 201-6.4 (a) (7) | 2 | General Conditions - Fees |
| FACILITY | 6NYCRR 201-6.4 (a) (8) | 16 | General Conditions - Right to Inspect |
| FACILITY | 6NYCRR 201-6.4 (c) | 3 | Recordkeeping and Reporting of Compliance Monitoring |
| FACILITY | 6NYCRR 201-6.4 (c) (2) | 4 | Records of Monitoring, Sampling and Measurement |
| FACILITY | 6NYCRR 201-6.4 (c) (3) (ii) | 5 | Reporting Requirements - Deviations and Noncompliance |
| FACILITY | 6NYCRR 201-6.4 (d) (4) | 23 | Compliance Schedules - Progress Reports |
| FACILITY | 6NYCRR 201-6.4 (e) | 6 | Compliance Certification |
| FACILITY | 6NYCRR 201-6.4 (f) | 24 | Operational Flexibility |
| FACILITY | 6NYCRR 201-6.5 (a) | 86 | State Enforceable Requirements |

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|-------------------|------------------------|------------|---|
| FACILITY | 6NYCRR 201-7.1 | 53 | Emission Capping in Facility Permits |
| FACILITY | 6NYCRR 202-1.1 | 17 | Required emissions tests. |
| FACILITY | 6NYCRR 202-1.2 | 25 | Notification. |
| FACILITY | 6NYCRR 202-1.3 | 26, 27, 28 | Acceptable procedures. |
| FACILITY | 6NYCRR 202-1.4 | 29 | Separate emission tests by the commissioner. |
| FACILITY | 6NYCRR 202-1.5 | 30 | Prohibitions. |
| FACILITY | 6NYCRR 202-2.1 | 7 | Emission Statements - Applicability |
| FACILITY | 6NYCRR 202-2.5 | 8 | Emission Statements - record keeping requirements. |
| FACILITY | 6NYCRR 211.1 | 87 | General Prohibitions - air pollution prohibited |
| FACILITY | 6NYCRR 211.2 | 31 | General Prohibitions - visible emissions limited. |
| FACILITY | 6NYCRR 215.2 | 9 | Open Fires - Prohibitions |
| FACILITY | 6NYCRR 225-1.2 (d) | 32 | Sulfur-in-Fuel Limitation - Distillate Oil |
| U-00003/00003/090 | 6NYCRR 227-1.3 (a) | 59 | Particulate Emission Standards |
| FACILITY | 6NYCRR 227-1.3 (c) | 33 | Annual Tune-up Requirement |
| FACILITY | 6NYCRR 227-1.4 (a) | 34 | Opacity Standard |
| U-00027/00027 | 6NYCRR 227-2.4 (c) (1) | 82 | Emission limits. |
| U-00022/00022 | 6NYCRR 227-2.4 (d) | 81 | Small boilers, small combustion turbines, and small stationary internal combustion engines. |
| U-00028/00028 | 6NYCRR 227-2.4 (d) | 83 | Small boilers, small combustion turbines, and small stationary internal combustion engines. |
| U-00020/-/GT2 | 6NYCRR 227-2.4 (e) (1) | 76 | Simple cycle combustion turbines. |
| U-00020/-/GT1 | 6NYCRR 227-2.4 (e) (2) | 74, 75 | Combined cycle combustion turbines. |
| U-00003/00003 | 6NYCRR 227-2.5 (a) | 56 | Fuel switching option. |
| U-00004/00004 | 6NYCRR 227-2.5 (a) | 61 | Fuel switching option. |
| U-00020/-/GT2 | 6NYCRR 227-3.4 (a) (2) | 77 | May 1, 2025 Control Requirements |
| U-00003/00003 | 6NYCRR 231-10 | 57 | Emission Reduction Credits (ERCs) |
| U-00004/00004 | 6NYCRR 231-10 | 62 | Emission Reduction Credits (ERCs) |
| U-00020 | 6NYCRR 231-2.4 (a) (1) | 67 | Permit Requirements |
| FACILITY | 6NYCRR 242-1.5 | 88 | CO2 Budget Trading Program - Standard requirements |
| FACILITY | 6NYCRR 242-4 | 89 | CO2 Budget Trading Program - Compliance certification |
| FACILITY | 6NYCRR 242-8.5 | 90 | CO2 Budget Trading |

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|---------------|------------------|----|--|
| FACILITY | 6NYCRR 251.3 (b) | 91 | Program - Recordkeeping and reporting |
| U-00003/00003 | 6NYCRR 251.3 (b) | 93 | Emission limits for non-modified sources. |
| U-00020 | 6NYCRR 251.3 (b) | 95 | Emission limits for non-modified sources. |
| FACILITY | 6NYCRR 251.5 | 92 | Monitoring |
| U-00003/00003 | 6NYCRR 251.5 | 94 | Monitoring |
| U-00020 | 6NYCRR 251.5 | 96 | Monitoring |

Applicability Discussion:

Mandatory Requirements: The following facility-wide regulations are included in all Title V permits:

ECL 19-0301

This section of the Environmental Conservation Law establishes the powers and duties assigned to the Department with regard to administering the air pollution control program for New York State.

6 NYCRR 200.6

Acceptable ambient air quality - prohibits contravention of ambient air quality standards without mitigating measures

6 NYCRR 200.7

Anyone owning or operating an air contamination source which is equipped with an emission control device must operate the control consistent with ordinary and necessary practices, standards and procedures, as per manufacturer's specifications and keep it in a satisfactory state of maintenance and repair so that it operates effectively

6 NYCRR 201-1.4

This regulation specifies the actions and recordkeeping and reporting requirements for any violation of an applicable state enforceable emission standard that results from a necessary scheduled equipment maintenance, start-up, shutdown, malfunction or upset in the event that these are unavoidable.

6 NYCRR 201-1.7

Requires the recycle and salvage of collected air contaminants where practical

6 NYCRR 201-1.8

Prohibits the reintroduction of collected air contaminants to the outside air

6 NYCRR 201-3.2 (a)

An owner and/or operator of an exempt emission source or unit may be required to certify that it operates within the specific criteria described in this Subpart. All required records must be maintained on-site for a period of 5 years and made available to department representatives upon request. In addition, department representatives must be granted access to any facility which contains exempt emission sources or units, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

6 NYCRR 201-3.3 (a)

The owner and/or operator of a trivial emission source or unit may be required to certify that it operates within the specific criteria described in this Subpart. All required records must be maintained on-site for a period of 5 years and made available to department representatives upon request. In addition, department

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representatives must be granted access to any facility which contains trivial emission sources or units subject to this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

6 NYCRR Subpart 201-6

This regulation applies to those terms and conditions which are subject to Title V permitting. It establishes the applicability criteria for Title V permits, the information to be included in all Title V permit applications as well as the permit content and terms of permit issuance. This rule also specifies the compliance, monitoring, recordkeeping, reporting, fee, and procedural requirements that need to be met to obtain a Title V permit, modify the permit and demonstrate conformity with applicable requirements as listed in the Title V permit. For permitting purposes, this rule specifies the need to identify and describe all emission units, processes and products in the permit application as well as providing the Department the authority to include this and any other information that it deems necessary to determine the compliance status of the facility.

6 NYCRR 201-6.4 (a) (4)

This mandatory requirement applies to all Title V facilities. It requires the permittee to provide information that the Department may request in writing, within a reasonable time, in order to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. The request may include copies of records required to be kept by the permit.

6 NYCRR 201-6.4 (a) (7)

This is a mandatory condition that requires the owner or operator of a facility subject to Title V requirements to pay all applicable fees associated with the emissions from their facility.

6 NYCRR 201-6.4 (a) (8)

This is a mandatory condition for all facilities subject to Title V requirements. It allows the Department to inspect the facility to determine compliance with this permit, including copying records, sampling and monitoring, as necessary.

6 NYCRR 201-6.4 (c)

This requirement specifies, in general terms, what information must be contained in any required compliance monitoring records and reports. This includes the date, time and place of any sampling, measurements and analyses; who performed the analyses; analytical techniques and methods used as well as any required QA/QC procedures; results of the analyses; the operating conditions at the time of sampling or measurement and the identification of any permit deviations. All such reports must also be certified by the designated responsible official of the facility.

6 NYCRR 201-6.4 (c) (2)

This requirement specifies that all compliance monitoring and recordkeeping is to be conducted according to the terms and conditions of the permit and follow all QA requirements found in applicable regulations. It also requires monitoring records and supporting information to be retained for at least 5 years from the time of sampling, measurement, report or application. Support information is defined as including all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

6 NYCRR 201-6.4 (c) (3) (ii)

This regulation specifies any reporting requirements incorporated into the permit must include provisions regarding the notification and reporting of permit deviations and incidences of noncompliance stating the probable cause of such deviations, and any corrective actions or preventive measures taken.

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6 NYCRR 201-6.4 (d) (4)

This condition applies to every Title V facility subject to a compliance schedule. It requires that reports, detailing the status of progress on achieving compliance with emission standards, be submitted semiannually.

6 NYCRR 201-6.4 (e)

Sets forth the general requirements for compliance certification content; specifies an annual submittal frequency; and identifies the EPA and appropriate regional office address where the reports are to be sent.

6 NYCRR 202-1.1

This regulation allows the department the discretion to require an emission test for the purpose of determining compliance. Furthermore, the cost of the test, including the preparation of the report are to be borne by the owner/operator of the source.

6 NYCRR 202-2.1

Requires that emission statements shall be submitted on or before April 15th each year for emissions of the previous calENDar year.

6 NYCRR 202-2.5

This rule specifies that each facility required to submit an emission statement must retain a copy of the statement and supporting documentation for at least 5 years and must make the information available to department representatives.

6 NYCRR 211.2

This regulation limits opacity from sources to less than or equal to 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

6 NYCRR 215.2

Except as allowed by section 215.3 of 6 NYCRR Part 215, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

40 CFR Part 68

This Part lists the regulated substances and there applicability thresholds and sets the requirements for stationary sources concerning the prevention of accidental releases of these substances.

40 CFR Part 82, Subpart F

Subpart F requires the reduction of emissions of class I and class II refrigerants to the lowest achievable level during the service, maintenance, repair, and disposal of appliances in accordance with section 608 of the Clean Air Act AmENDments of 1990. This subpart applies to any person servicing, maintaining, or repairing appliances except for motor vehicle air conditioners. It also applies to persons disposing of appliances, including motor vehicle air conditioners, refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment. Those individuals, operations, or activities affected by this rule, may be required to comply with specified disposal, recycling, or recovery practices, leak repair practices, recordkeeping and/or technician certification requirements.

Facility Specific Requirements

In addition to Title V, SAMUEL A CARLSON GENERATING STATION has been determined to be subject to the following regulations:

40 CFR 60.11 (d)

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This regulation specifies the type of opacity monitoring requirements in relation to compliance with the standards and maintenance requirements.

40 CFR 60.12

This regulation prohibits an owner or operator from concealing emissions in violation of applicable standards by any means.

40 CFR 60.13 (a)

This regulation specifies that all New Source Performance Standard (NSPS) affected sources that are required to have continuous monitoring systems (CMS) are subject to the requirements of Appendix B of 40 CFR Part 60 and if the CMS is used to demonstrate compliance with emission limits on a continuous basis, then it is also subject to Appendix F of 40 CFR Part 60.

40 CFR 60.13 (d)

This regulation contains the requirements for daily drift testing for continuous monitoring systems required by 40 CFR Part 60.

40 CFR 60.13 (e)

This regulation specifies minimum frequency of operation requirements for continuous monitoring systems required by 40 CFR Part 60.

40 CFR 60.13 (h)

This regulation specifies the data averaging requirements for continuous monitoring systems subject to 40 CFR Part 60.

40 CFR 60.332 (a) (1)

This regulation provides the equation to be used to determine the allowable emissions of oxides of nitrogen (NO_x) from a gas turbine with a heat input greater than 100 million BTU per hour.

40 CFR 60.332 (f)

This regulation allows gas turbines using water or steam injection to control NO_x to be exempt from section 332.a when ice fog is deemed a traffic hazard.

40 CFR 60.4

This condition lists the USEPA Region 2 address for the submittal of all communications to the "Administrator". In addition, all such communications must be copied to NYSDEC Bureau of Quality Assurance (BQA).

40 CFR 60.44b (1) (1)

This subdivision sets emissions standards for oxides of nitrogen for the firing of coal, oil, natural gas, or a mixture of all fuels.

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40 CFR 60.48c (g)

The owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each day.

40 CFR 60.49b (d)

This subdivision requires reporting and recordkeeping for affected steam generating units - annual fuel capacity factors.

40 CFR 60.7 (a)

This regulation requires any owner or operator subject to a New Source Performance Standard (NSPS) to furnish the Administrator with notification of the dates of: construction or reconstruction, initial startup, any physical or operational changes, commencement of performance testing for continuous monitors and anticipated date for opacity observations as required.

40 CFR 60.7 (b)

This regulation requires the owner or operator to maintain records of the occurrence and duration of any startup, shutdown, or malfunction of the source or control equipment or continuous monitoring system.

40 CFR 60.7 (f)

This condition specifies requirements for maintenance of files of all measurements, including continuous monitoring system (CMS), monitoring device, and performance testing measurements; all CMS performance evaluations; all CMS or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices for at least two years.

40 CFR 63.11210 (i)

This condition states when compliance must be demonstrated for an owner or operator that makes a physical change to a boiler such that it is subject to a different subcategory of subpart JJJJJ or newly subject to subpart JJJJJ.

40 CFR 63.11223 (c)

This condition states that owners or operators of boilers that use an oxygen trim system must conduct a tune-up every five years.

40 CFR 63.11225 (b)

This condition states what must be submitted in the annual compliance certification report.

40 CFR 63.11225 (c)

This condition states what records must be kept.

40 CFR 63.6603 (a)

These conditions list the emission limits, operating limits, and work practices that existing engines

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located at an area source of HAP emissions must meet.

40 CFR 97.1006

40 CFR Part 97 Subpart GGGGG the NO_x Ozone Season Cross State Air Pollution Rule (CSAPR) requires additional NO_x reductions from power plants located in twelve (12) states beginning with the 2021 ozone season. It is designed to reduce NO_x emissions during the ozone season (May - September) for large fossil fuel fired electric generating units that have a nameplate capacity of greater than 25 megawatts electrical and produce electricity for sale. The new Group 3 Trading Program would be in addition to the existing Groups 1 and 2 NO_x Ozone Trading Programs. The final rule does not include ozone season NO_x emission limits for non-EGUs.

40 CFR 97.406

This condition provides the general requirements for implementing EPAs Transport Rule (TR) 40 CFR Part 97, Subpart AAAAA; intended to reduce the interstate transport of fine particulate matter and ozone. This particular condition requires facilities to measure and report their emissions of Nitrogen Oxide (NO_x) and to hold TR annual NO_x allowances sufficient to cover these emissions. Commonly referred to as a budget trading program, each State has an established 'budget' of emissions that are distributed or sold to facilities, which, in turn, can only emit as much as they hold in allowances.

40 CFR 97.606

This condition provides the general requirements for implementing EPAs Transport Rule (TR) 40 CFR Part 97, Subpart CCCCC; intended to reduce the interstate transport of fine particulate matter and ozone. This particular condition requires facilities to measure and report their emissions of sulfur dioxide (SO₂) annually and to hold TR annual SO₂ allowances sufficient to cover these emissions. Commonly referred to as a budget trading program, each State has an established 'budget' of emissions that are distributed or sold to facilities, which, in turn, can only emit as much as they hold in allowances.

40 CFR Part 60, Subpart A

This regulation contains the General Provisions of 40 CFR 60. The facility owner is responsible for reviewing these general provisions in detail and complying with all applicable technical, administrative and reporting requirements.

40 CFR Part 72

In order to reduce acid rain in the U.S. and Canada, Title IV of the Clean Air Act Amendments of 1990 requires the establishment of a program to reduce emissions of SO₂ and NO_x (sulfur dioxide and oxides of nitrogen). Fossil fuel burning electric utility companies are a major source of these contaminants in the US. These sources were regulated in a phased approach. Phase I, which began in 1995, requires 110 of the higher-emitting utility plants in the eastern and Midwest states to meet intermediate SO₂ emission limitations. Phase II, which began in 2000, tightens the emission limitations and expands the coverage to most fossil fuel burning utilities. The utilities are given "allowances" which is a limited authorization to emit one ton of SO₂. The utilities are required to limit SO₂ emissions to the number of allowances they hold. Some can benefit however by reducing their emissions and selling their excess allowances. Part 72 contains the means of implementing this portion of Title IV of the Clean Air Act.

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6 NYCRR 201-3.2 (b)

The owner and/or operator of any emission source or unit that is eligible to be exempt on the basis of the use of appropriate emission control devices shall operate and maintain such devices in a manner consistent with good engineering practices. Failure to do so constitutes a violation of this Part.

6 NYCRR 201-3.3 (b)

The owner and/or operator of any emission source or unit that is eligible to be considered as a trivial source on the basis of the use of appropriate emission control devices shall operate and maintain such devices in a manner consistent with good engineering practices. Failure to do so constitutes a violation of this Part.

6 NYCRR 201-6.4 (a) (4)

The owner or operator 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 the permit or to determine compliance with the permit. The permittee shall also furnish to the department copies of records required to be kept by the permit.

6 NYCRR 201-6.4 (a) (7)

The owner or operator of a facility shall pay fees to the department consistent with the fee schedule authorized by Subpart 482-2 of this Title.

6 NYCRR 201-6.4 (a) (8)

The department or an authorized representative shall be allowed upon presentation of credentials and other documents as may be required by law to: enter upon the permittee's premises; have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit; inspect at reasonable times any emission sources, equipment, practices, and operations regulated or required under the permit; and sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

6 NYCRR 201-6.4 (c)

This citation lists the information that must be included in records, reports, and compliance monitoring.

6 NYCRR 201-6.4 (c) (2)

Records of all monitoring data and support information must be retained for a period of at least five years.

6 NYCRR 201-6.4 (d) (4)

Progress reports consistent with an applicable schedule of compliance are to be submitted at least semiannually.

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6 NYCRR 201-6.4 (f)

This section describes the potential for certain operational changes to be made by the facility owner or operator without first obtaining a permit modification. Changes made pursuant to this provision must meet all of the criteria described in this section to qualify for consideration as operational flexibility. The Department reserves the right to require the facility owner or operator to obtain a permit modification prior to making any changes at the facility pursuant to this section.

6 NYCRR 201-6.5 (a)

This subdivision states that the Department shall include state enforceable conditions in Title V permits. State enforceable conditions related to regulations developed pursuant to the Climate Leadership and Community Protection Act (CLCPA) and Article 75 of New York State Environmental Conservation Law may be included in future versions of this permit, as applicable.

6 NYCRR 201-7.1

This section of Part 201-7.1 specifies the criteria that need to be met in order to restrict emissions to avoid Title V or other applicable requirements using federally enforceable permit conditions permit.

6 NYCRR 202-1.2

This regulation specifies that the department is to be notified at least 30 days in advance of any required stack test. The notification is to include a list of the procedures to be used that are acceptable to the department. Finally, free access to observe the stack test is to be provided to the department's representative.

6 NYCRR 202-1.3

This regulation requires that any emission testing, sampling and analytical determination used to determine compliance must use methods acceptable to the department. Acceptable test methods may include but are not limited to the reference methods found in 40 CFR Part 60 appendix A and Part 61, appendix B. Alternate methods may be also be used provided they are determined to be acceptable by the department. Finally, unless otherwise specified, all emission test reports must be submitted within 60 days after completion of testing.

6 NYCRR 202-1.4

This regulation allows the department discretion to conduct separate or additional emission tests, including preparation of the testing site, at the source owner's expense, to determine compliance.

6 NYCRR 202-1.5

This rule prohibits the concealment of an emission by the use of air or other gaseous diluents (diluting agents) to achieve compliance with an emission standard which is based on the concentration of a contaminant in the gases emitted through a stack.

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6 NYCRR 211.1

This regulation requires that no person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property.

6 NYCRR 225-1.2 (d)

This subdivision sets the sulfur-in-fuel limitation for distillate oil fired emission sources throughout the State.

6 NYCRR 227-1.3 (a)

This subdivision sets the particulate matter emission standards for subject stationary combustion installations. Boiler #9 must meet this new particulate limit while burning oil.

6 NYCRR 227-1.3 (c)

This subdivision requires that all stationary combustion installations subject to this subpart perform an annual tune-up.

6 NYCRR 227-1.4 (a)

This subdivisions sets the opacity standard for subject stationary combustion installations. All the combustion sources are subject to this 20% opacity standard.

6 NYCRR 227-2.4 (c) (1)

Presumptive NOx RACT emission limits for mid-size boilers, one's with a heat input of more than 25 million Btu/hr but no more than 100 million BTU/hr. This applies to the 73.5 MMBtu/hr boiler in EU-00027.

6 NYCRR 227-2.4 (d)

This section includes NOx RACT requirements for small boilers, small combustion turbines, and small stationary internal combustion engines.

6 NYCRR 227-2.4 (e) (1)

Presumptive NOx RACT emission limits for simple cycle combustion turbines.

6 NYCRR 227-2.4 (e) (2)

A case-by-case NOx RACT analysis is required for combined cycle combustion turbines to determine the appropriate NOx RACT limits. This applies to the gas turbine in emission unit 00020 when it operates in

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combined cycle. The facility proposed, and the DEC accepted, different NO_x RACT limits for the Ozone Season and the Non-Ozone Season.

6 NYCRR 227-2.5 (a)

Fuel switching NO_x RACT compliance option. The facility used the fuel switching option to comply with NO_x RACT for boilers #9 and #10. They fuel switched from coal to natural gas and distillite oil at boiler #9. They fuel switched from coal to natural gas at boiler #10.

6 NYCRR 227-3.4 (a) (2)

This paragraph sets the ozone season NO_x emission limit for the gas turbine when is is operating in simple cycle mode. The 100 ppm NO_x limit is effective May 1, 2023 and the facility will demonstrate compliance with it by meeting the 227-2 NO_x RACT limit of 50 ppm. The limit decreases to 25 ppm effective May 1, 2025.

6 NYCRR 231-2.4 (a) (1)

The provisions of Subpart 231-2 apply to new or modified major facilities. The contaminants of concern state-wide are nitrogen oxides and volatile organic compounds since New York State is located in the ozone transport region and because there are ozone non-attainment areas within the state. In the New York City metropolitan area, carbon monoxide is also a non-attainment contaminant. In addition, particulate matter less than 10 microns in size (PM-10) is a non-attainment contaminant in Manhattan County.

The permitting requirements for proposed source projects and new major facilities are set forth in section 231-2.4.

6 NYCRR 242-1.5

This regulation requires that the facility hold enough carbon dioxide allowances in their carbon dioxide budget at least equal to the amount of carbon dioxide emitted from the facility each year.

6 NYCRR 242-8.5

This regulation requires the CO₂ authorized account representative to comply with all applicable recordkeeping and reporting requirements in section 242-8.5 of 6 NYCRR Part 242, the applicable record keeping and reporting requirements under 40 CFR 75.73 and with the certification requirements of section 242-2.1(e) of 6 NYCRR Part 242.

6 NYCRR 251.3 (b)

CO₂ emission limits for non-modified fossil fuel-fired existing major electric generating facilities, facilities that have a generating capacity of at least 25 MW. It applies to all combustion units burning fossil fuels and serving a generator with a capacity of 15 MW or greater that supplies electricity to the grid. The non-modified existing source CO₂ limit applies to the gas turbine, boiler #9 and boiler #10.

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6 NYCRR 251.5

This citation requires monitoring to evaluate compliance with the CO2 emission limits of this regulation. Boilers #9 and #10 will follow EPA's Part 75.19 Low Mass Emitter (LME) requirements to determine CO2 emissions. These boilers use LME for EPA's Acid Rain program too. The gas turbine will continue to follow EPA's Part 75 continuous emission monitoring (CEMS) requirements to determine CO2 emissions. The turbine emissions are currently monitored with CEMS for EPA's Acid Rain program.

6 NYCRR Subpart 231-10

This subpart outlines the procedures used to create and use emission reduction credits (ERCs). In this permit, Ren 2 Mod 0, ERC's were created from boiler #9 and boiler #10 when the potential NOx emissions were capped below the PTE, using the NOx RACT compliance rate (0.20 lb NOx/MMBtu). 10.1 tons of NOx ERC's were created at boiler #9 and 17.7 tons of NOx ERC's were created at boiler #10.

6 NYCRR Subpart 242-4

This citation requires that a Compliance Certification report be submitted by March 1st, following every control period (every 3 years), certifying compliance with the CO2 Budget Trading Program.

Compliance Certification

Summary of monitoring activities at SAMUEL A CARLSON GENERATING STATION:

| Location Facility/EU/EP/Process/ES | Cond No. | Type of Monitoring |
|---|-----------------|---|
| --- | | |
| FACILITY | 43 | record keeping/maintenance procedures |
| FACILITY | 44 | record keeping/maintenance procedures |
| U-00020/-/DB1 | 72 | continuous emission monitoring (cem) |
| U-00020/-/DB1 | 73 | record keeping/maintenance procedures |
| FACILITY | 46 | record keeping/maintenance procedures |
| U-00020 | 68 | continuous emission monitoring (cem) |
| U-00020 | 69 | record keeping/maintenance procedures |
| U-00003 | 54 | record keeping/maintenance procedures |
| U-00003 | 55 | record keeping/maintenance procedures |
| U-00003/00003 | 58 | record keeping/maintenance procedures |
| FACILITY | 48 | record keeping/maintenance procedures |
| U-00020 | 70 | record keeping/maintenance procedures |
| U-00020 | 71 | record keeping/maintenance procedures |
| FACILITY | 50 | record keeping/maintenance procedures |
| FACILITY | 5 | record keeping/maintenance procedures |
| FACILITY | 6 | record keeping/maintenance procedures |
| U-00004 | 60 | monitoring of process or control device parameters as surrogate |
| U-00020 | 63 | continuous emission monitoring (cem) |
| U-00020 | 64 | monitoring of process or control device parameters as surrogate |

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| | | |
|-------------------|----|---|
| U-00020 | 65 | intermittent emission testing |
| U-00020 | 66 | continuous emission monitoring (cem) |
| U-00022 | 78 | monitoring of process or control device parameters as surrogate |
| U-00022 | 79 | monitoring of process or control device parameters as surrogate |
| U-00022 | 80 | monitoring of process or control device parameters as surrogate |
| FACILITY | 7 | record keeping/maintenance procedures |
| FACILITY | 32 | monitoring of process or control device parameters as surrogate |
| U-00003/00003/090 | 59 | intermittent emission testing |
| FACILITY | 33 | record keeping/maintenance procedures |
| FACILITY | 34 | monitoring of process or control device parameters as surrogate |
| U-00027/00027 | 82 | intermittent emission testing |
| U-00022/00022 | 81 | record keeping/maintenance procedures |
| U-00028/00028 | 83 | record keeping/maintenance procedures |
| U-00020/-/GT2 | 76 | continuous emission monitoring (cem) |
| U-00020/-/GT1 | 74 | continuous emission monitoring (cem) |
| U-00020/-/GT1 | 75 | continuous emission monitoring (cem) |
| U-00003/00003 | 56 | intermittent emission testing |
| U-00004/00004 | 61 | intermittent emission testing |
| U-00020/-/GT2 | 77 | continuous emission monitoring (cem) |
| U-00003/00003 | 57 | monitoring of process or control device parameters as surrogate |
| U-00004/00004 | 62 | monitoring of process or control device parameters as surrogate |
| FACILITY | 88 | record keeping/maintenance procedures |
| FACILITY | 89 | record keeping/maintenance procedures |
| FACILITY | 90 | record keeping/maintenance procedures |
| FACILITY | 91 | monitoring of process or control device parameters as surrogate |
| U-00003/00003 | 93 | monitoring of process or control device parameters as surrogate |
| U-00020 | 95 | monitoring of process or control device parameters as surrogate |
| FACILITY | 92 | record keeping/maintenance procedures |
| U-00003/00003 | 94 | record keeping/maintenance procedures |
| U-00020 | 96 | record keeping/maintenance procedures |

Basis for Monitoring

1. Permit conditions at the facility level are based on citations from 6 NYCRR Parts 200, 201, 202, 211 and 215 and are conditions that are in every Title V (five) operating permit. These conditions generally reiterate rules that apply to most facilities and some require the permittee to monitor or take actions.
2. Permit conditions that list 6 NYCRR Part 201-7.1 (Permits and Registrations, Federally Enforceable Emission Caps) contains federally enforceable emission capping conditions. The emission caps limit emissions below applicability thresholds for the listed emission units, emission points, or emission sources. Compliance with the emission caps are demonstrated by measuring actual emissions with continuous emission monitors on the gas turbine stacks or calculating emissions based on fuel use at other sources.
 - NOx emissions from boiler # 9 and #10 are each capped at 25 tpy to create NOx ERC's.
 - NOx, CO, and PM-10 emissions from the gas turbine, EP's 20 and 21, and the 23.3 MMBtu/hr boiler, EP 22, were capped when the gas turbine project was permitted in year 2000:
 - NOx emissions are capped at 5.0 ton/yr from U-00022 the small boiler and 160.0 ton/yr from the gas turbine, emission unit U-00020 on a 52-week rolling total basis. These caps, combined with 125.5 ton/yr of NOx emission reduction credits generated by curtailment of boilers #10 and #11 in emission unit

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U-00004 resulted in a net emission increase of NO_x that is less than the 40 ton/yr significant net emission increase threshold found in both 6NYCRR 231-2 and 40 CFR 52.21.

CO emissions are capped at 8.7 ton/yr from the small boiler, emission unit U-00022, and to 90.0 ton/yr from the gas turbine, emission unit U-00020, on a 52-week rolling total basis. These caps resulted in a net emission increase of CO from the gas turbine project that is less than the 100 ton/yr significant net emission increase threshold for CO found in 40 CFR 52.21.

PM-10 emissions are limited to 0.8 ton/yr from the small boiler, emission unit U-00022, and 14.0 ton/yr from the gas turbine, emission unit U-00020, on a 52-week rolling total basis. These caps resulted in a net emission increase of PM-10 from the gas turbine project that is less than the 15 ton/yr significant net emission increase threshold for PM-10 found in 40 CFR 52.21.

3. This permit contains NO_x emission caps for emission unit 00004, boilers #10 and #11, that were implemented in the 1999 to 2001 timeframe for the gas turbine addition project, emission unit #20. At the time NO_x was capped at 145 tons per year from EU 00004 to create 125.0 tons of NO_x Emission Reduction Credits (ERC's). Since then boiler #11 was shutdown. In 2014 the emissions from EU 00004 were further capped at 25 tons per year to create an additional 17.7 tons of NO_x ERC's. Compliance with the 25 ton cap will demonstrate compliance with the 145 ton cap. The 145 cap was kept in the permit to document the earlier capping.

4. Permit conditions that list 6 NYCRR Part 225-1 (Fuel Composition and Use - sulfur limitations) as the applicable requirement regulate the sulfur content of the fuel oil burned by all sources at the plant. The sulfur content of each delivery of oil is evaluated for compliance. Part 225-1 limits the sulfur content of distillate oil to no more than 0.0015 percent by weight (15 ppm). This is the lowest sulfur content limit of all the applicable sulfur in oil requirements. Compliance with this limit will demonstrate compliance with other sulfur in oil limits.

5. Permit conditions that list 6 NYCRR Part 227-1 (Stationary Combustion Installations) as the applicable requirement regulates particulate and opacity emissions from combustion sources. Each boiler is included in the Part 227-1 opacity permit condition. If operational problems occur the facility is required to conduct visible emission observations as explained in the permit condition. A new particulate limit from Part 227-1 was added and is subject to boiler #9 while burning oil. The particulate emissions shall not exceed 0.10 pounds per million BTU.

6. Permit conditions that list 6 NYCRR Part 227-2 (Nitrogen Oxide Reasonably Available Control Technology, NO_x RACT) as the applicable requirement specify what information must be recorded and submitted by the regulation. The NO_x RACT emission limits apply to the boilers and the combined emissions of the LM6000 combustion gas turbine and duct burner. The Department approved a revised NO_x RACT compliance plan in a October 23, 2014 letter:

Boiler #9 complies with NO_x RACT by switching from coal to cleaner fuels, natural gas (primary fuel) and ultra-low sulfur distillate fuel oil (backup fuel). This is known as 'fuel switching'. Boiler #9 NO_x emissions are also capped at 25 tons per 52-week rolling total to ensure the fuel switching project meets the Insignificant Modification in New Source Review, 6 NYCRR Part 231-11.2.

Boiler #10 complies with NO_x RACT by switching from coal to a cleaner fuel, natural gas. This is known as 'fuel switching'. Boiler #10 NO_x emissions are also capped at 25 tons per 52-week rolling total to ensure the fuel switching project meets the Insignificant Modification in New Source Review, 6 NYCRR Part 231-11.2.

The LM6000 combustion gas turbine has three NO_x RACT limits:

- 35 ppmvd NO_x @ 15% oxygen during combined cycle operation in the ozone season (May 1st through September 30th),
- 42 ppmvd NO_x @ 15% oxygen during combined cycle operation in the non-ozone season (October 1st through April 30th), and

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- 50 ppmvd NO_x @ 15% oxygen whenever it is operating in simple cycle mode.
The 73.5 MMBtu natural gas boiler will comply with the presumptive 0.05 lb/MMBtu NO_x limit. The 23.3 MMBtu/hr and 3.2 MMBtu/hr natural gas boilers will meet the presumptive RACT requirement for small boilers, an annual boiler tune-up.
- 7. 6 NYCRR Part 227-3, Ozone Season Oxides of Nitrogen (NO_x) for Simple Cycle and Regenerative Combustion Turbines is a newer requirement that applies to the gas turbine when it operates in simple cycle mode during the ozone season (May 1 through September 30, annually). The facility will comply with the 100 ppm, corrected to 15% oxygen, NO_x limit that becomes effective May 1, 2023 by complying with Subpart 227-2 NO_x Reasonably Available Control Technology (RACT) limit of 50 ppm, corrected to 15% oxygen limit that they must already meet. In 2025 the Subpart 227-2 limit reduces to 25 ppm, corrected to 15 oxygen, and the facility expects to meet the lower limit with minor operating modifications.
- 8. Permit conditions that list 6 NYCRR 231-2 (New Source Review in Non-Attainment Areas and Ozone Transport Regions) as the applicable requirement document the use of emission reduction credits (ERC's) for the gas turbine project that occurred between 1999 and 2001. 6 NYCRR Part 201-7 capping conditions and along with, Part 231-2, created ERC's so the project was not subject to the modeling, emission control, and emission offsets requirements of Part 231-2 when the combustion gas turbine project, emission unit U-00020, was permitted and constructed. This condition created 125.0 tons of NO_x emission reduction credits from emission unit 00004 by limiting emissions to 145.0 tons a year in year 2000. This permit, Renewal 2, Modification 0 (issued in 2019), includes a condition that limits NO_x emissions from emission unit 00004 to 25.0 to create 10.1 tons of NO_x ERCs. This condition was kept in the permit for historical purposes. Compliance with the 25 tpy cap demonstrates compliance with this permit condition.
- 9. The permit condition for 6 NYCRR 231-10 (New Source Review in Non-Attainment Areas and Ozone Transport Regions) as the applicable requirement, documents the creation of NO_x emission reduction credits (ERC's). The ERC's were generated by switching from coal to natural gas and distillate fuel oil in boiler #9 and switching from coal to natural gas in boiler #10. The fuel switch was made to comply with the NO_x RACT requirements of 6 NYCRR Part 227-2, as allowed by the fuel switching compliance option in 6 NYCRR 227-2.5(a). The NO_x RACT limit for the new fuels, gas and oil, did not change, 0.20 pounds of NO_x per million BTU, the presumptive RACT limit for pulverized coal. The potential to emit NO_x from boiler #9 is 35.1 tons a year. The potential to emit NO_x from boiler #10 is 42.7 tons a year. The facility accepted a 25 ton per year NO_x emission cap on each boiler to create 10.1 tons of NO_x ERC's from boiler #9 and 17.7 tons of NO_x ERC's from boiler #10. The NO_x PTE is now 25 tpy for each boiler.
- 10. Permit conditions that list 6 NYCRR 242 (CO₂ Budget Trading Program) as the applicable requirement, track the emissions of carbon dioxide from the combustion gas turbine (EU U-00020), boiler #9 (EU U-00004) and boiler #10 (EU U-00003). Part 242 was revised, effective December 2020, to apply to any combustion unit, that any time on or after January 1, 2021, serves an electric generator with a nameplate capacity equal to or greater than 15 MWe that resides at a CO₂ Budget Source, per 6 NYCRR 242-1.4(a)(2). Before this applicability change, the gas turbine was subject to Part 242, so the facility was already a CO₂ Budget Source. All CO₂ emissions from the gas turbine while operating in combined cycle (includes duct burner emissions) must comply with Part 242.
- 11. The permit includes requirements from EPA's Cross State Air Pollution Rule (CSAPR) which regulates emissions of NO_x and SO₂. The requirements of the Clean Air Interstate Rule (CAIR), which were contained in 6 NYCRR Parts 243, 244 and 245, have been replaced by the Cross-State Air Pollution Rule (CSAPR). Requirements for the CSAPR program are in the permit conditions for 40 CFR Part 97, subparts AAAAA, CCCCC and GGGGG. This change does not affect the reporting requirements for the facility. CSAPR only applies to the emissions from the combustion gas turbine, emission unit U-00020.

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12. The requirements from 6 NYCRR 246, Mercury Reduction Program for Coal-Fired Electric Utility Steam Generating Unit do not apply to the facility since it stopped burning coal. Part 246 was not carried over into this permit renewal.
13. 6 NYCRR Part 251, CO₂ Performance Standards for Major Electric Generating Facilities, was added to the permit after the applicability was revised. It applies to boilers #9 and #10, as well as the gas turbine. All three are considered 'non-modified existing sources' and will meet the input-based CO₂ limit for each source.
14. Permit conditions that list 40 CFR 60 subpart A (New Source Performance Standards (NSPS) - General Provisions) as the applicable requirement, requires the facility to comply with notification, monitoring, record keeping, and reporting requirements of all applicable NSPS requirements.
15. Permit conditions that list 40 CFR 60 subpart Db (New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units, 100 to 250 million Btu per hour) as the applicable regulation apply only to the duct burner associated with the gas turbine. Subpart Db limits the emissions of nitrogen oxide (NO_x). The permittee elected to use the continuous emission monitoring system on the combined cycle stack to demonstrate compliance. The combined cycle stack is EP 00021. The duct burner only burns natural gas so it is only subject to the NO_x requirements and fuel monitoring requirements.
16. Permit conditions that list 40 CFR 60 subpart Dc (New Source Performance Standards (NSPS) (New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units, 10 to 100 million Btu per hour) as the applicable regulation, requires the small natural gas boiler (EU 00022, 23.3 MMBtu/hr) and the midsize natural gas package boiler (EU 00027, 73.5 MMBtu/hr) to monitor and record daily fuel consumption.
17. The combustion gas turbine is subject to 40 CFR 60 subpart GG (New Source Performance Standards for Stationary Gas Turbines) which limits the emissions of sulfur dioxide (SO₂), nitrogen oxide (NO_x), and opacity. The record keeping and monitoring requirements are prescribed by the regulation.
The permittee requested not to monitor the sulfur content of the natural gas fired in the LM6000 combustion gas turbine as allowed in 40 CFR 60.334(h)(3). Analytical results were submitted with a July 25, 2006 letter to support this request. The permittee does not use the nitrogen content of the natural gas to calculate the NO_x emission limit in 40 CFR Part 60 subpart GG, so the facility is not required to measure the nitrogen content of natural gas for subpart GG purposes.
18. Permit conditions that list 40 CFR Part 63 subpart JJJJJ (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources [40 CFR Part 63.11193, subpart JJJJJ (6J's)], as the applicable regulation sets requirements to minimize emissions from boiler #9. The regulation specifies tune-ups, monitoring, recordkeeping and reporting. Subpart JJJJJ only applies to boiler #9 because it fires distillate oil as a backup fuel. Subpart JJJJJ does not apply to boilers that only burn natural gas. Boiler #9 is considered an existing oil-fired boiler. When the permittee was burning coal, it was a major source of hazardous air pollutants. Since the permittee no longer burns coal the facility is an Area Source of HAP's, as confirmed in a September 16, 2014 letter from EPA to Jamestown Board of Public Utilities. Boiler #9 was subject to a one-time energy assessment which was performed
19. The requirements from 40 CFR 64, Continuous Assurance Monitoring (CAM) were not carried into this permit because the facility stopped burning coal in the boilers. The current potential pre-control device emissions from boilers #9 or #10 don't exceed major source thresholds.

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