

APPENDIX

The following Appendix was filed with a Notice of Proposed Rule Making pertaining to Set Nitrogen Oxide (NOx) Emission Rate Limits for Simple Cycle and Regenerative Combustion

Turbines, I.D. ENV-09-19-00015-P published in this issue of the State Register.

6 NYCRR Subpart 227-3, OZONE SEASON OXIDES OF NITROGEN (NOX) EMISSION LIMITS FOR SIMPLE CYCLE AND REGENERATIVE COMBUSTION TURBINES

Express Terms

227-3.1 Applicability.

- (a) The provisions of this Subpart apply to owners or operators of simple cycle and regenerative combustion turbines (SCCTs) that are electric generating units with a nameplate capacity of 15 megawatts (MW) or greater and that bid into the New York Independent System Operator (NYISO) wholesale market.
- (b) The provisions of this Subpart only apply during the ozone season.

227-3.2 Definitions.

- (a) To the extent that they are not inconsistent with the specific definitions in subdivision (b) of this section, the general definitions of Part 200, Part 201, and Subpart 227-2 of this Title apply.
- (b) For the purposes of this Subpart, the following specific definitions apply:
 - (1) 'Common control.' Refers to two or more sources that are under the control of a single corporate entity. The corporate entity must:
 - (i) have the right to bid an electricity generating asset into the NYISO wholesale markets and/or decide when to operate the plant; or
 - (ii) have the right to bid an electricity generating asset into the NYISO wholesale markets through a power purchase agreement or other agreement and the entity that owns the asset provides the necessary paperwork required under subdivision 227-3.3(b) of this Subpart.

- (2) 'Electric storage resource.' A resource capable of receiving electric energy from the grid and storing it for later injection of electric energy back to the grid.
- (3) 'Hydroelectric energy.' The conversion of potential and kinetic energy in the form of falling or fast-flowing water into mechanical energy which drives turbines producing electricity.
- (4) 'MWh.' Megawatt hour of electricity.
- (5) 'NYISO.' New York Independent System Operator.
- (6) 'ORISPL.' Office of Regulatory Information Systems Plant Code assigned by the Energy Information Administration to electric generating units.
- (7) 'Ozone season.' May 1 through October 31 of each calendar year.
- (8) 'Power purchase agreement.' A contract between two entities pursuant to which one entity agrees to produce electricity, or some other power source, for the other entity over a defined period of time.
- (9) 'Renewable generation resources.' Solar photovoltaic energy, wind energy, tidal energy or hydroelectric energy electricity generating systems.
- (10) 'Solar photovoltaic energy.' Technology that directly converts the energy radiated by the sun as electromagnetic waves into electricity by means of solar panels.
- (11) 'Substation.' An area or group of equipment to transform power from one voltage to another or from one system to another.
- (12) 'Tidal energy.' The conversion of kinetic energy in the form of tide movement into mechanical energy which drives turbines producing electricity.
- (13) 'Wholesale market.' The sum of purchases and sales of energy and capacity for resale along with ancillary services needed to maintain reliability and power quality at the transmission level coordinated together through the NYISO and power exchanges. A party that purchases energy,

capacity or ancillary services in the wholesale market to serve its own load is considered to be a participant in the wholesale market.

(14) 'Wind energy.' The conversion of kinetic energy in the form of wind or air flows into mechanical energy which drives turbines producing electricity.

227-3.3 Permitting requirements and compliance plan submittal.

(a) Each facility containing an SCCT subject to this Subpart must have or obtain a permit pursuant to Parts 201 and 621 of this Title that reflects the implementation of the compliance plan required in subdivision 227-3.3(b) of this Subpart prior to the May 1, 2023 compliance date of this Subpart in order to operate on and after the applicable compliance date.

(b) Each facility containing an SCCT subject to this Subpart must submit a compliance plan to the Department by March 2, 2020. Each compliance plan must, at minimum, contain:

(1) a list of each SCCT subject to the requirements of this Subpart that includes any identifying numbers such as ORISPL number, source number and nameplate capacity.

(2) a schedule outlining how the owner or operator will comply with the requirements set forth in this Subpart including which SCCTs will install controls, controls to be installed, the expected NOx emission rates, SCCTs to be replaced or repowered, and/or SCCTs to be shut down.

(3) a list of renewable resources to be installed under common control of the permittee to be used in the compliance option described in subdivision 227-3.5 (b) of this Subpart. This list shall include, for each renewable resource:

(i) location;

(ii) nameplate capacity or equivalent; and

(iii) documentation demonstrating common control.

(4) A list of electric storage resources to be installed under common control of the permittee to be used in the compliance option described in subdivision 227-3.5 (b) of this Subpart. This list shall include, for each electric storage source:

- (i) location;
- (ii) nameplate capacity or equivalent;
- (iii) duration of discharge; and
- (iv) documentation demonstrating common control.

(5) Pursuant to subparagraph 227-3.2(b)(1)(ii) the entity that owns the asset must provide a letter, as part of the compliance plan, that the bidding and/or dispatch rights have been provided to the entity asserting common control.

227-3.4 Control Requirements.

(a) The following emission limits on a parts per million dry volume basis (ppmvd), corrected to fifteen percent oxygen must be met as a facility-level average of all SCCTs at a facility:

(1) By May 1, 2023

	Emission Limit (ppmvd)
All SCCTs	100

(2) By May 1, 2025

Fuel Type	Emission Limit (ppmvd)
Gaseous fuels	25
Distillate oil or other liquid fuel	42

(3) Compliance with these emission limits must be determined by conducting stack tests, as set forth in subdivision 227-2.6(c) of Subpart 227-2 of this Title, at a minimum of once per permit term. Alternatively, the owner or operator may choose to use a Continuous Emissions Monitoring System (CEMS) consistent with the provisions of subdivision 227-2.6(b) of Subpart 227-2 of this Title.

227-3.5 Compliance options.

(a) ‘Ozone season stop.’ An owner or operator of an existing SCCT may opt to comply with this Subpart by not operating the SCCT during the ozone season. The ozone season stop provision must be included as an enforceable permit condition in a final permit or permit modification issued prior to the applicable compliance deadline of this Subpart.

(b) ‘Electric storage and renewable energy resources.’ An owner or operator of an SCCT may opt to comply with this Subpart by meeting the following average output-based emission limits on a daily basis pursuant to the following:

(1) Owners and operators must meet the following facility-level daily average emission limits on a pounds of NO_x per megawatt hour (lb/MWh) basis for all SCCTs at a facility.

(i) By May 1, 2023:

	Emission Limit (lb NO _x /MWh)
All SCCTs	3.0

(ii) By May 1, 2025:

Fuel Type	Effective Daily Emission Limit (lb NO _x /MWh)
Gaseous fuels	1.5
Distillate oil or other liquid fuel	2.0

(2) The owner or operator of an SCCT that uses electric storage or renewable energy resources to inject electricity to the grid may demonstrate compliance with the applicable effective daily NO_x emission limits by including the electrical energy, in MWh, injected to the grid from electric storage and/or renewable generation resources in the emission rate calculation provided that:

- (i) The renewable generation resource and/or the electric storage resource must be directly connected to the same physical substation as the SCCT with which it is being averaged; or
- (ii) within one-half mile radius of the SCCT with which it is being averaged.
- (iii) All sources that are averaged under this compliance option must be under common control.

(3) The effective emission rate may be calculated by:

(i) $Effective\ Rate = \frac{MassNO_x}{MWh_{CT} + MWh_{ST} + MWh_{RE}}$, where:

(‘a’) MassNO_x = NO_x emissions (pounds) each day from all SCCTs at the permitted facility.

(‘b’) MWh_{CT} = electrical energy delivered to the grid (in MWh) from SCCTs at the permitted facility each day.

(‘c’) MWh_{ST} = electrical energy delivered to the grid (in MWh) from storage resources over each day.

(‘d’) MWh_{RE} = electrical energy delivered to the grid (in MWh) from renewable generation each day.

(4) If the owner or operator burns both gaseous fuel and liquid fuel during the same day, a facility electrical energy (MWh) weighted average must be calculated to determine a resultant mix fuel emission rate. The mix fuel rate must first be calculated to determine the allowable emission rate and then calculated again to determine the actual mix fuel emission rate.

(i) Allowable Mix Fuel Rate = $\frac{RateG \times GenG + RateO \times GenO}{GenG + GenO}$ where:

(‘a’) RateG = Effective daily emission limit (lb NO_x/MWh) burning gas as defined in 227-3.5(b) of this Subpart.

(‘b’) RateO = Effective daily emission limit (lb NO_x/MWh) burning oil as defined in 227-3.5(b) of this Subpart.

(‘c’) GenG = electrical energy (MWh) generated burning gas each day

(‘d’) GenO = electrical energy (MWh) generated burning oil each day

(ii) Actual Mix Fuel Rate = $\frac{RateG \times GenG + RateO \times GenO}{GenG + GenO + GenR + GenS}$ where:

(‘a’) RateG = lb NO_x/MWh burning gas

(‘b’) RateO = lb NO_x/MWh burning oil

(‘c’) GenG = electrical energy (MWh) generated burning gas each day

(‘d’) GenO = electrical energy (MWh) generated burning oil each day

(‘e’) GenR = electrical energy (MWh) injected to the grid from renewable energy resources each day

(‘f’) GenS = electrical energy (MWh) injected to the grid from electric storage resources each day

227-3.6 Electric System Reliability

(a) An SCCT may continue to operate after the compliance deadline if:

(1) that SCCT is designated as a reliability source, to temporarily resolve a reliability need, by the NYISO, through its generator deactivation process, or by the local transmission/distribution owner.

(2) a designated reliability source may continue to operate until one of the following provisions are met:

(i) a permanent solution is placed online as determined by the NYISO, the local transmission/distribution owner or the New York State Public Service Commission; or

(ii) two years after the designated compliance date under this Subpart has lapsed.

(b) A designated reliability source may operate an additional two years if:

(1) the NYISO determines that the reliability need still exists,

(2) the source is designated by the NYISO or the transmission/distribution owner as a reliability source, and

(3) a permanent solution has been selected by NYISO, the transmission/distribution owner or the New York State Public Service Commission and that solution is in the process of permitting or construction but not yet online.

227-3.7 Testing, monitoring, and reporting requirements

(a) The owner or operator of each SCCT must measure or monitor daily NO_x emissions in accordance with paragraphs (1) or (2) below.

(1) Measure in accordance with the emission test requirements described in subdivision 227-2.6(c) of Subpart 227-2 of this Title, or

(2) Monitor with a CEMS as described in subdivision 227-2.6(b) of Subpart 227-2 of this Title or with an equivalent monitoring system acceptable to the Department.

(b) The owner or operator of each SCCT must report operational data to the Department by November 30 of each year. The report must be in a form prescribed by the Department. The operational data must include:

(1) NO_x emissions from each SCCT for each compliance period.

(2) If the electric storage and renewable resources compliance option is used, report daily electrical generation in MWh injected into the grid from each SCCT and each electric storage and/or renewable resource.

(3) In the event that emissions of air contaminants in excess of any emission standard in this Subpart occur the facility owner or operator shall compile and maintain records of the exceedance and notify the Department as soon as possible during normal working hours, but not later than two working days after becoming aware that the exceedance occurred. When requested by the Department, the facility owner or operator shall submit a written report to the department describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates.

227-3.8 Severability

Each provision of this Subpart shall be deemed severable, and in the event that any provision of this Subpart is held to be invalid, the remainder of this Subpart shall continue in full force and effect.

