6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R02-OAR-2025-0242; FRL-12787-01-R2]

Approval of Source-Specific Air Quality Implementation Plan; New York; Castleton Power, LLC

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: Pursuant to applicable requirements under the Clean Air Act (CAA or the Act), the Environmental Protection Agency (EPA) is proposing to approve a revision to the State of New York's State Implementation Plan (SIP) for the ozone National Ambient Air Quality Standard (NAAQS) related to a source-specific SIP (SSSIP) revision for Castleton Energy Center, located at 1902 River Road, Castle-on-Hudson, New York 12033 (herein referred to CEC, or the Facility). The EPA is proposing to find that the control option in this SSSIP revision is Reasonably Available Control Technology (RACT) with respect to oxides of nitrogen (NO_x) emissions from the relevant Facility emission source, i.e., a combined-cycle combustion turbine generator with an associated heat recovery steam generator equipped with a duct burner, and a steam generator, identified as emission unit 1-0GTDB in the Facility's CAA Title V operating permit. This SSSIP revision is intended to implement NO_x RACT for the relevant Facility source in accordance with the requirements for implementation of the 2008 and 2015 ozone NAAQS. The EPA proposes to determine that this action will not interfere with ozone NAAQS requirements and meets all applicable requirements of the Act.

DATES: Comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Submit your comments, identified by Docket No. EPA-R02-OAR-2025-0242, at *https://www.regulations.gov* (our preferred method), or the other methods identified in this section. Once submitted, comments cannot be edited or removed from the docket. EPA may publish any comment received to its public docket. Do not submit to EPA's docket at *https://www.regulations.gov* any information you consider to be Confidential Business Information (CBI), Proprietary Business Information (PBI), or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). Please visit *https://www.epa.gov/dockets/commenting-epa-dockets* for additional submission methods; the full EPA public comment policy; information about CBI, PBI, or multimedia submissions; and general guidance on making effective comments.

FOR FURTHER INFORMATION CONTACT: Ysabel Banon, Environmental Protection Agency, Air Programs Branch, Region 2, 290 Broadway, New York, New York 10007-1866, telephone number: (212) 637-3382, email address: *banon.ysabel@epa.gov*.

SUPPLEMENTARY INFORMATION: For additional information on the regulatory background and EPA's technical findings relating to the Facility RACT, the reader can refer to the Technical Support Document (TSD) that is contained in the EPA docket assigned to this *Federal Register* document.

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I. Background

Ground level ozone formation

Ground level ozone is not released directly from an emission source, instead ozone forms in the atmosphere as a secondary air pollutant created by chemical reactions that occur when ozone precursors, including NO_x and volatile organic compounds (VOCs), chemically react in the presence of sunlight. Emissions from industrial facilities are anthropogenic (human-made) sources of ozone precursors. The potential for ground-level ozone formation tends to be highest during months with warmer temperatures and stagnant air masses. Ozone levels are thus generally higher during the summer months, which is often referred to as "the ozone season." In New York, the ozone season is generally considered to be between April 15 and October 15, while the non-ozone season is generally considered to be between October 16 and April 14.

Ozone Nonattainment

A geographic area of the United States that is not meeting the primary or secondary National Ambient Air Quality Standard (NAAQS) for ozone is described as a nonattainment area. Nonattainment areas are classified as Marginal, Moderate, Serious, Severe, or Extreme.[1] With respect to this proposed action, there are two relevant ozone NAAQS: the 2008 and the 2015 ozone NAAQS. First, on March 12, 2008, EPA promulgated a revision to the ozone NAAQS, setting both the primary and secondary standards at 0.075 parts per million (ppm) averaged over an 8-hour time frame (2008 8-hour Ozone Standard) (73 FR 16436, March 27, 2008). Second, on October 1, 2015, EPA lowered these standards to 0.070 ppm averaged over an 8-hour time frame (2015 8-hour Ozone Standard) (80 FR 65292, October 26, 2015). Under CAA section 184, the State of

[1] Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

New York is located within the Ozone Transport Region (OTR), which essentially means that it is subject to statewide RACT requirements. The Facility is located in the OTR (outside an area of nonattainment) and has the potential to emit at least 50 tons per year of NO_x, making it subject to RACT requirements.

Federal RACT Requirements

RACT is defined as the lowest emission limit that a source is capable of meeting through the application of control technology that is reasonably available considering technological and economic feasibility.[2] CAA sections 184(b)(1)(B) and 184(b)(2) set forth the requirement to establish control measures to implement RACT for sources of VOC located in the OTR. For major sources of NO_x, CAA section 182(f)(1) also applies[3].

NYSDEC RACT Requirements

The New York State Department of Environmental Conservation (NYSDEC) RACT requirements applicable to a particular emission source may fall into one of two categories: presumptive RACT limits[4] or case-by-case RACT determinations, the latter of which applies in this matter. NYSDEC's case-by-case RACT regulations establish RACT requirements for combustion turbines. See Title 6 of New York's Code and Regulations (NYCRR) subpart 227-2, which EPA last approved into the New York SIP on July 12, 2013.[5] Specifically, 6 NYCRR 227-2.4(e)(3) requires the owner or operator of a combustion turbine operating after July 1, 2014, to submit a proposed plan for RACT to be implemented that includes descriptions of: (1) available NO_x control technologies, the projected effectiveness of the technologies considered, and the costs for installation and

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[2] See, EPA, "Guidance for determining acceptability of SIP regulations in non-attainment areas," memo 1976, Roger Strelow, document available in the docket.

[3] See CAA 182 (f)(1), "The plan provisions required under this subpart for major stationary sources of volatile organic compounds shall also apply to major stationary sources (as defined in section 7602 of this title and subsections (c), (d), and (e) of this section) of oxides of nitrogen".

[4] Presumptive RACT are category-wide requirements. These limits may be complied with by direct application of emission limits on the emission source, the use of flexibility mechanisms such as switching fuels or participation in a system averaging plan, or a commitment to shut down the emission source (6 NYCRR 227-2.4).

[5] The EPA-approved version of 6 NYCRR 227-2 became effective July 8, 2010, and was approved by EPA in 2013 (78 FR 41846 at 78 FR 41850, July 12, 2013).

operation for each of the technologies; and (2) technology and the appropriate emission limit selected as RACT considering the costs for installation and operation of the technology.

A State's case-by-case RACT determination under 6 NYCRR 227-2.4(e)(3) establishes a source-specific NO_x control requirement based on the technical and economic feasibility of controls for the emissions unit. The State then submits that determination to EPA as a SSSIP revision for approval. The SSSIP submission should include the facility's RACT plan that demonstrates how the facility will implement RACT. The SSSIP should also include the applicable CAA Title V operating permit conditions that address RACT requirements. In developing the case-by-case RACT determination the State evaluates the technological and economic circumstances of the individual source. The EPA then evaluates whether the State's SSSIP determination satisfies applicable CAA RACT requirements and is adequately supported by the administrative record. Upon the EPA's approval, the case-by-case RACT control requirements for the facility become part of the federally enforceable SIP.

Under existing NYSDEC RACT regulations, facilities are required to assess all technologically feasible control options that meet the State's cost threshold. The cost threshold for the NYSDEC RACT requirements is established under the NYSDEC 2013 policy, "DAR-20 Economic and Technical Analysis for Reasonably Available Control Technology (RACT)." Under this policy, facilities must evaluate, in their RACT determinations, control technologies capable of reducing VOC or NO_x emissions up to a specified cost-effectiveness threshold, expressed in dollars per ton of VOC or NO_x removed, and adjusted for inflation.[6] Under the DAR-20, NYSDEC established the

[6] The DAR-20 cost-effectiveness threshold is expressed in 1994 dollars. The State of New York relies on the U.S. Department of Labor, Bureau of Labor Statistics inflationary calculator to adjust the RACT economic feasibility threshold over time for inflation. *See* https://www.bls.gov/data/inflation_calculator.html.

following cost-effectiveness threshold, based on 1994 dollars, to define economic feasibility:

- NO_x (statewide) - $3,000/ton reduced (1994 dollars)

When adjusted for inflation, this threshold equates to $6,080 per ton of NO_x reduced in June 2022 dollars, the relevant time period in this matter because it corresponds to the submission of the Castleton Energy Center (CEC) RACT Plan.

II. The EPA's Evaluation of New York's Submission

This proposed rule concerns the Facility's emission unit 1-0GTDB, a combined-cycle Combustion Turbine Generator (CTG) with an associated Heat Recovery Steam Generator (HRSG) equipped with a duct burner, and a steam generator, identified as in the Facility's CAA Title V operating permit. The combined-cycle turbine generator is equipped with a steam injection system to control NO_x emissions. The duct burner fires natural gas only. Although combined-cycle combustion turbines produce NO_x emissions while generating electricity, they are more efficient than simple-cycle turbines because they utilize both fuel and steam to power turbines. Specifically, they generate electricity by igniting natural gas or No. 2 distillate fuel oil with compressed air and using the resulting hot, expanding, gases to spin turbine blades that drive a generator to convert the spinning turbine energy into electricity. In addition, rather than allowing for exhaust gases that would otherwise have been released into the atmosphere, the gas is directed to the HRSG to produce additional electricity. Exhaust gas exiting the HRSG is discharged to the atmosphere through a 144-inch inside diameter stack approximately 145 feet above ground.

Pursuant to 6 NYCRR part 227-2.4(e)(3), the Facility submitted a RACT plan concluding that steam injection control is the only technologically, and economically feasible NO_x control technology for the Facility. The RACT plan identified the following conditions in the Facility's Title V operating permit as satisfying the NO_x RACT

requirements of 6 NYCRR Part 227-2.4(e) and the associated monitoring, reporting and recordkeeping requirements of 6 NYCRR Part 227-2.6 (see Castleton Appendix B):

- **Condition 30.** Emission unit 1-0GTDB, process oil. The NO_x emission limit, when firing fuel oil, must be demonstrated using Teledyne T802 Continues Emission Monitoring System (CEMS). The applicable limit 42 part per million by volume (ppmvd) (dry, corrected to 15 percent O_2). The Facility must monitor at a minimum frequency of once every six months.[7]
- **Condition 31.** Emission unit 1-0GTDB, process natural gas. The NO_x emission limit, when firing natural gas, must be demonstrated using the difference between CEMS data collected when the duct burners are firing in combination with the combustion turbine and CEMS data collected when the combustion turbine is firing alone. The applicable emissions limit is 15.5 pounds per hour. The Facility must monitor at a minimum frequency of once every six months.
- **Condition 32.** Emission unit 1-0GTDB, process natural gas. The NO_x emission limit, when firing gas, must be demonstrated using the difference between CEMS data collected when the duct burners are firing in combination with the combustion turbine and CEMS data collected when the combustion turbine is firing alone. The applicable emission limit is 0.10 lb./MMBtu. The Facility must monitor at a minimum frequency of once every six months.
- **Condition 35:** Emission unit 1-0GTDB, process natural gas. The NO_x emission limit when firing natural gas is 25 ppmvd (dry, corrected to 15 percent O_2). The Facility must monitor at a minimum frequency of once every six months.

[7]This emission limit is equivalent to the NO_x standard in 40 CFR 60 Subpart KKKK, Table 1, applicable to a modified or reconstructed turbine firing natural gas with a heat input at peak load greater than 50 MMBtu/hr and equal to or less than 850 MMBtu/hr. Under that standard, NO_x emissions are limited to 42 ppmvd at 15 percent O_2. *See* https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-KKKK.

- **Condition 49:** Emission unit 1-0GTDB. The Facility must limit the combined NOx emissions from the combustion turbine, and duct burner to 157.49 tons per year.

Each of these permit conditions requires CEC to utilize CEMs, and to report monitoring results semi-annually. Condition 49 requires the CEMs data to be compiled monthly and reported semi-annually. Additionally, Conditions 30, 31, 32 and 35 provide for reference test method RM 7; Condition 49 provides for reference test method RM 20.

On April 10, 2025, NYSDEC provided relative accuracy test audit (RATA) reports for Emissions Unit 1-0GTDB. The RATA reports demonstrated compliance with the emissions limits required in the Title V permit.

On April 22, 2024, NYSDEC submitted the SSSIP revision package that is the subject of this proposed action. See Source-Specific State Implementation Plan Revision (SSSR) for Castleton Energy in Schodack, New York (herein referred to as State RACT Plan). The EPA has reviewed the RACT Plan for emission unit 1-0GTDB for consistency with the CAA and EPA's regulations, as interpreted through EPA's actions and guidance.

EPA RACT analysis

The EPA's evaluation of the RACT Plan is described below. For further detail, refer to the TSD available in the docket for this rulemaking.

To determine what NO_x control technologies could be economically and technologically feasible for the 1-0GTDB combined-cycle CTG/HRSG, duct burner, and STG, the EPA reviewed the Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate Clearinghouse (RBLC).[8] The EPA's RBLC search criteria were based on large combined-cycle combustion turbines permitted in the ten years prior to the RACT plan. The EPA's RBLC review did not

[8] The RBLC contains case-specific information on the best available air pollution technologies that have been required to reduce the emission of air pollutants from stationary sources. *See* https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en.

identify any facilities in the United States with operating configurations sufficiently similar to CEC to provide a basis for meaningful comparison.

The EPA also reviewed vendor quotes for (1) Dry Low NO_x (DLN) from Power System Mfg. capable of reducing NO_x emissions to 5 ppmvd; (2) Selective Catalytic Reduction (SCR) from Hammon-Deltak capable of reducing NO_x emissions to 3 ppmvd; and (3) SCR by Peerless MFG. Co. that would reduce NO_x emissions to 2.5 ppmvd, which are three potential control options that are not currently implemented but that are technically feasible.[9] The EPA's cost-effectiveness calculation, shown in the TSD at Table A, demonstrates that the SCR system from Hamon-Deltak is the lowest NO_x control system among the vendors reviewed and this control method would result in a cost-effectiveness value of approximately $21,315 per ton of NOx reduced, substantially exceeding NYSDEC's inflation-adjusted DAR-20 threshold of $6,080 per ton of NO_x reduced in June 2022 dollars.[10]

Based on the RBLC review and cost-effectiveness analysis, the EPA concludes that no additional NO_x control technologies have been identified for emission unit 1-0GTDB that are both technically feasible and cost-effective that are in addition to the steam injection NO_x control system currently in operation.

The EPA reviewed CEC's recent yearly emissions from 2020 through 2023. Table 1 shows the recent Facility's annual NO_x emissions well under the case-by-case overall RACT emission limit of 157.49 tons per year.[11]

Table 1. Historic CEC NO_x emissions

Year	Annual Emissions (tons per year)
2020	32.55
2021	54.66
2022	60.77

[9] *See* email from NYSDEC permit writer that explains the scope of control technologies under consideration.

[10] The June 2022 date is used in the inflation calculation because it correlates with the date of the CEC RACT Plan's cost analysis.

[11] The Facility's Title V permit, condition 49, states that the annual NO_x 157.49 ton/yr from the combustion turbine and duct burner will satisfy RACT control requirements. See also the TSD, section II.d., Results.

2023	32.55
Average	45.13

Source: EPA Emission Inventory System

Historic actual emissions provide context, however they are not determinative of RACT emission limits. The EPA has reviewed the State's case-by-case RACT determination submitted as a SSSIP under 6 NYCRR 227-2.4(e)(3), including the evaluation of available NO_x control technologies and the EPA conducted its own cost-effective evaluation in making its determination, see the TSD for further information attached in the docket.

III. EPA's Proposed Action

The EPA is proposing to approve New York's SSSIP revision to implement RACT for emission unit1-0GTDB, located at Castleton Energy Center in Castleton-on-Hudson, New York, based on the RACT analysis provided by NYSDEC in its April 22, 2024, SIP submission, the EPA's review RBLC for similar sources, and the EPA's cost-effectiveness analysis. The TSD provides additional detail on EPA's analysis of technical and economic feasibility.

Specifically, EPA proposes to determine that the following requirements implement RACT for emission unit 1-0GTDB: (1) continued operation of the existing combined cycle combustion turbine steam NO_x emission controls; (2) compliance with the NO_x emission limits contained in conditions 30, 31, 32, 35 and 49, of the Facility's CAA Title V permit; (3) demonstration of compliance with emission limits through the use of CEMS, as required in condition 30, 31, 32, 35 and 49, and (4) continuous monitoring of applicable emissions limits , and rolling monthly tracking of the overall NO_x emission limit of 157.49 tons per year, and (5) semi-annual reporting of compliance. Based on the State's SSSIP submission and supporting analysis as required under 6 NYCRR 227-2.4(e)(3), the EPA is proposing to approve a source-specific NO_x limit as a case-by-case RACT for emission unit 1-0GTDB, reflecting the lowest emission level

achievable when accounting for technological and economic feasibility, including the cost-effectiveness of additional controls under the unit's historic operating profile, consistent with the CAA. The respective NO_x RACT emission limit is contained in the Facility's CAA Title V permit, State Facility Permit, 4-3844-00008/00006, specifically under Conditions 30, 31,32, 35, and 49[12], issued by the State on March 21, 2023, and expires on March 20, 2028. The EPA is proposing to approve the incorporation of the permit conditions 30, 31,32, 35, and 49 into New York's SIP. These conditions outline NO_x emission limits and related monitoring, reporting, and recordkeeping requirements for the proposed combined-cycle CTG and are further described in Section II of this preamble.

IV. Incorporation by Reference

In this document, EPA is proposing to include regulatory text that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, EPA is proposing to incorporate by reference revisions to CEC's CAA Title V operating permit Conditions # 30, 31, 32, 35 and 49 as described in sections II and III of this preamble. The EPA has made, and will continue to make, these materials generally available through www.regulations.gov.

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the CAA and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve State choices, provided that they meet the criteria of the CAA. Accordingly, this action merely proposes to approve State law as meeting Federal requirements and does not impose additional requirements beyond those imposed by State law. For that reason, this

[12] The Facility's CAA Title V permit condition 49, Item 49.2, page 36, erroneously cites 6 NYCRR 277. The correct reference is NYCRR part is 227-2 "Reasonably Available Control Technology (RACT) for Major Facilities of Oxides of Nitrogen (NO_x)".

proposed action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- Is not subject to Executive Order 14192 (90 FR 9065, February 6, 2025) regulatory action because this action is not significant under Executive Order 12866:
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because it approves a State program;
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001); and
- Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because this action does not involve technical standards.

In addition, the SIP is not proposing to apply on any Indian reservation land or in any other area where EPA or an Indian Tribe has demonstrated that a Tribe has jurisdiction. In those areas of Indian country, the rule does not have Tribal implications,

and it will not impose substantial direct costs on Tribal governments or preempt Tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Oxides of nitrogen, Ozone, Reporting and recordkeeping requirements.

Authority: 42 U.S.C. 7401 et seq.

Michael Martucci,
Regional Administrator,
Region 2.

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