

existing SCR-equipped (Selective Catalytic Reduction) coal-fired combustion units was to submit Case-by-Case RACT II determinations that satisfy § 129.99 (April 1, 2021 submission deadline). See associated discussion below, under the permit change on removal of the RACT II-related compliance schedule.

- § 129.100 – Recordkeeping to demonstrate compliance with applicable RACT requirements.

RACT II Case-by-Case Requirements

Below are the permit changes made related to RACT II requirements for Sources 031, 032, & 033.

(Addition) RACT II Case-by-Case (Alternative) Requirements

The RACT II Case-by-Case requirements established for Sources 031, 032, & 033 are the following. For details on these requirements, see the Technical Evaluation memo & the RACT II review memo.

Marked with [†] are additional changes made as part of the permit modification. Under the authority of § 129.99, these requirements are incorporated under Source Group *BOILERS – RACT II CASE-BY-CASE* in Section E. Source Group Restrictions of the modified permit.

- *EMISSIONS.* The table below summarizes the RACT II NOx emission limitations. Compliance with these limits is through use of CEMS.

		NOx Emission Limitation ^[a]	
		Sources 031 & 032	Source 033
Daily Average	Excludes startup, shutdown, malfunction	0.08 lb/mmBtu	0.07 lb/mmBtu
	All operating conditions ^[b]	0.45 lb/mmBtu	0.27 lb/mmBtu
30-Operating Day Rolling Average	All operating conditions ^[b]	550 lb/hr	510 lb/hr

^[a] Individual limitations.

^[b] Includes emissions from startup, shutdown, & malfunctions.

- *MONITORING.*
 - SCR inlet temperature & ammonia injection rate to determine compliance with Operation & Maintenance (O&M) plans.
 - The SCR minimum operating temperature shall be measured using the sensors at the outlet of the SCR.
 - [†] Added a permit condition on calculations of emission rates to demonstrate compliance with the applicable RACT II NOx emission limitations. For the language, see Attachment A of this review memo. Because the permit condition is not part of the RACT II proposal approved (RACT II Review Memo), this is incorporated under the authority of § 127.441.
 - In calculating daily average emission rates in lb/mmBtu, the permittee is referred to the definition of *Daily Average* based on the Technical Evaluation Memo.

- In calculating 30-operating day rolling average, adapted method & language from § 129.100(a)(1)(i) & (ii), which was also used by Homer City in its RACT II Case-by-Case proposal.
- **RECORDKEEPING.**
 - SCR inlet temperature (i.e., at least one reading every 15 minutes) & ammonia injection rate (i.e., at least one reading every hour).
 - § 129.100(d) & (i).
- **REPORTING.**
 - Reporting provisions on malfunctions, cause/s, & corrective actions.
 - Submission of quarterly reports of SCR inlet temperature (i.e., hourly average) & ammonia injection rate (i.e., hourly average). See permit or the RACT II Review Memo for the defined reporting periods.
- **WORK PRACTICE.** Work practice requirements as follows:
 - Calibrate, operate & maintain all elements of the SCR system & units in accordance with manufacturer's specifications & good engineering & air pollution control practices.
 - *NOx controls during startups, shutdown & malfunctions.*
 - Maintain NOx controls as effectively as reasonably possible during startups & shutdowns.
 - Take steps to bring NOx controls back into full service as quickly as practicable whenever the control equipment experiences a malfunction.
 - *Operator's training.* All operators of Sources 031, 032 & 033, SCR & LNB shall be trained in operation & maintenance of the units they are assigned to operate by qualified personnel.
 - *Operation & Maintenance (O&M) plans.*
 - Develop, maintain, & implement an operation & maintenance (O&M) plan for Sources 031, 032 & 033 & SCR within 30 days of issuance of the modified permit. O&M plan shall include, but not limited to the following: (a) inspection, repairs & preventive maintenance procedures; (b) a description of preventive maintenance schedules, spare parts inventories, procedures & protocols for unscheduled outages, & provisions for equipment replacements & measures to be taken to protect the SCR system in the event of failure or shutdown; (c) inspection of duct work & boiling casing & repair leaks to maintain flue gas temperature; (d) details of practices & procedures during periods of startup, shutdown, & upset conditions to prevent emissions in excess of the standards.
 - Develop, maintain, & implement an operation & maintenance (O&M) plan for the LNBs of the 3 boilers within 30 days of issuance of the modified permit. O&M plan shall include, but not limited to the following: (a) inspection, repairs & preventive maintenance procedures; (b) a description of preventive maintenance schedules, spare parts inventories, procedures & protocols for unscheduled outages, & provisions for equipment replacements & measures to be taken to protect the air pollution control equipment in the event of failure or shutdown; (c) details of practices & procedures during periods of startup, shutdown, & upset conditions to prevent emissions in excess of the standards; (d) inspections, repairs & testing of Over Fire Air (OFA) components; (e) details of practices & procedures to ensure that the boiler is tuned to optimize NOx reduction over combustion efficiency, including but not limited to the properly adjusted burner angle.
 - *Catalyst activity test.*
 - Within the first 60 days of each calendar year, perform a catalyst activity test.

- Within 60 days of receiving the results of the catalyst activity test, consult with the SCR catalyst vendor to monitor SCR performance in accordance with the catalyst management plans (CMPs) developed for the SCR systems. Corrective actions, if required, must be completed by April 30th.
- *ADDITIONAL REQUIREMENTS.* § 129.99(g).

The following conditions are State-Only requirements (i.e., not part of SIP) as per the Technical Evaluation memo & the RACT II review memo. Under the authority of § 127.441, these conditions are also incorporated under the Source Group *BOILERS – RACT II CASE-BY-CASE*.

- *RECORDKEEPING.* Maintain records of the tune-up, which include: (a) tune-up date; (b) name of the service company & the technician performing the procedure; (c) final operating rate or load; (d) final NO_x & CO emission rates; (e) final excess oxygen rate.^[a]
- *WORK PRACTICE.* Work practice requirements as follows:
 - Operate & maintain Low NO_x Burners (LNB) in accordance with manufacturer's specifications & good engineering & air pollution control practices.
 - *Boiler tune-up requirement.*
 - Within 6 months of the effective date of the permit, tune the boilers to minimize NO_x emissions.
 - Annually, tune the boiler to minimize NO_x emissions. (This streamlines out the 3-year (or 36-month) tune-up required under § 63 Subpart UUUUU.)
 - *SCR NO_x emission rate setpoint.*
 - Within 3 months of the effective date of the permit, set the SCR for Sources 031 & 032 at a target NO_x emission rate set-point of 0.06 lb/mmbtu & the SCR for Source 033 at a target NO_x emission rate set-point of 0.05 lb/mmbtu.
 - After operating the SCRs at corresponding NO_x emission rate setpoints (0.06 lb/mmbtu for Sources 031 & 032, 0.05 lb/mmbtu for Source 033) for 12 consecutive months, submit an engineering study within 180 days that analyzes the overall environmental performance of the system at the setpoint.

NO_x CEMS Requirements – Certification & Operation

Homer City's NO_x CEMS must be certified/recertified for compliance demonstration with the established RACT II Case-by-Case NO_x limitations. Listed below are permit language added as part of this NO_x CEMS certification as per the RACT II review memo.^[b]

- A compliance schedule has been added to initiate the CEMS certification & testing process. For the compliance schedule, see Attachment B of this review memo.^[c]
- Incorporated provisions for the following under Source Group *BOILERS – NO_x CEMS* in Section E of the permit: data availability standards; recordkeeping (e.g., 5-yr record retention); reporting (e.g., quarterly CEMS reports); quality assurance; & testing. Several of these provisions incorporate by reference 25 Pa. Code Chapter 139, Subchapter C, and the Department's Continuous Source Monitoring Manual.

Other Related Changes

- [†] Reference to RACT II presumptive NO_x limits pursuant to § 129.97(g)(1)(viii) & (g)(1)(vi)(C) has been replaced with RACT II Case-by-Case NO_x limit pursuant to § 129.99(k) – e.g., § 60.44(a)(3) for Source 033.

- Revised contents of Section H. Miscellaneous. Note that Section H is for informational purposes only & is not enforceable.

[a] Recordkeeping similar to § 129.100(g) for combustion units.

[b] Permit language concerning CEMS certification & permit requirements as preferred/recommended by CEM Section.

[c] With respect to the RACT II review memo, language for the CEMS certification & testing is revised appropriately to reflect Homer City's permitting status: no plan approval issued but with an operating permit modified (i.e., with existing operating permit); no initial startup involved because not a new source.

(Removal) RACT II Presumptive Requirements

Below is the list of RACT II presumptive requirements included in Homer City's 2020 renewal permit but are now removed from the permit & replaced by the RACT II Case-by-Case requirements. ^[d]

- *Emission Restrictions.* NOx limits of 0.12 lb/mmBtu heat input, when the SCR reactor inlet temperature is at or above 600°F (§ 129.97(g)(1)(viii)), and 0.40 lb/mmBtu heat input, when the SCR reactor inlet temperature is less than 600°F (§ 129.97(g)(1)(vi)(C)).
- *Monitoring.*
 - § 129.100(a)(1), which is on calculation of 30-day rolling average. As summarized above, the RACT II Case-by-Case NOx emission limitations approved by the Department include one set on 24-hour basis (daily average) & another set on 30-operating day rolling basis.

[d] In the 2020 renewal permit, conditions on monitoring, recordkeeping & reporting of SCR inlet temperature & ammonia injection rate were incorporated as RACT II presumptive requirements (see renewal review memo dated December 15, 2020). These conditions are replaced by a similar but more detailed/stringent set of conditions that are part of the Case-by-Case requirements based on the determination performed (see the RACT II review memo).

(Removal) RACT II-Related Compliance Schedule

As documented in the review memo dated December 15, 2020, a Compliance Schedule had been added to the 2020 renewal permit to address the Third Circuit Court of Appeals' decision on Pennsylvania's RACT II SIP for SCR-equipped coal-fired combustion units and Homer City's concerns related to the permit conditions recommended by Regulatory Counsel & Central Office (i.e., see above). With the receipt of the required Case-by-Case RACT II proposal & approval of Case-by-Case RACT requirements, the Compliance Schedule is considered completed & therefore removed from the modified permit.

Other Permit Changes (Non-RACT)

(Revision) § 40 Part 97 (CSAPR) – Subpart GGGGG (5G) Replaces Subpart EEEEE (5E)

For the **ozone seasons during the 2017 to 2020 period**, Pennsylvania had been under NOx Ozone Season Group 2 (§ 52.38(b)(2)(iii)) & complied with § 97 Subpart 5E which pertains to *CSAPR NOx Ozone Season Group 2 Trading Program*. As documented in the review memo dated December 15, 2020, below are the provisions of § 97 Subpart 5E applicable to Homer City prior to 2021. Also noted are actions on these sections during this permit modification.

- § 97.804 (*Applicability*). Maintain in the modified permit because the 2020 NOx season allocations will be used in calculating supplemental allowances for the 2021 ozone season, specifically from May 1 through June 28, 2021 period.

Year	Unit 1 (Source 031)	Unit 2 (Source 032)	Unit 3 (Source 033)
2020	556 tons	500 tons	622 tons

- § 97.806 (*Standard requirements*). Same language as § 97.10006 of § 97 Subpart 5G. Incorporated by reference in the modified permit.
- § 97.830 (*General monitoring, recordkeeping, & reporting requirements*). Same language as § 97.1030 of § 97 Subpart 5G. Incorporated by reference.
- § 97.834 (*Recordkeeping and reporting*). Same language as § 97.1034 of § 97 Subpart 5G. Incorporated by reference.

In the modified permit, § 97 Subpart 5G, which pertains to *CSAPR NOx Ozone Season Group 3 Trading Program*^[a], is added. **Starting 2021 ozone season**, Pennsylvania is under NOx Ozone Season Group 3 & must comply with § 97 Subpart 5G, which became effective on June 29, 2021. Below are four sections of § 97 Subpart 5G incorporated into the modified permit.

- § 97.1004 (*Applicability*). This section is used as the authority to incorporate the NOx ozone season allocations for Homer City.^{[b],[c]}

Year	Unit 1 (Source 031)	Unit 2 (Source 032)	Unit 3 (Source 033)
2021	315 tons ^[d]	224 tons ^[d]	318 tons ^[d]
2022	314 tons	223 tons	318 tons
2023	314 tons	223 tons	318 tons
2024	314 tons	223 tons	318 tons

- § 97.1006 (*Standard requirements*). Compared to § 97.806 of § 97 Subpart 5E, § 97.1006 has an additional provision on supplemental allowances for 2021 ozone season (i.e., § 97.1006(c)(2)(iii)).
- § 97.1030 (*General monitoring, recordkeeping, & reporting requirements*).
- § 97.1034 (*Recordkeeping and reporting*).

^[a] § 97 Subpart 5G is the rulemaking that lowers the NOx ozone allocations for power plants in 12 states, including PA, in response to the September 2019 ruling by the US Court of Appeals for the D.C. Circuit, *Wisconsin v. EPA*, which remanded the 2016 CSAPR Update.

^[b] The revised NOx ozone season allowances can be obtained from <https://www.epa.gov/csapr/revised-cross-state-air-pollution-rule-update>. CSAPR, its versions (i.e., CSAPR; CSAPR update; revised CSAPR update), & corresponding allocations can be found in <https://www.epa.gov/airmarkets>.

^[c] As per EPA document fact sheet & the prepublication version for the revised CSAPR update final rule, after the 2024 ozone season, no further adjustments would be required for purposes of CSAPR.

^[d] As per EPA fact sheet for the revised CSAPR update, EPA would be issuing supplemental allowances based on the new rulemaking's effective date. For calculation of allowances, see § 97.1010(d).

^[e] The discussion & information above are adapted from a review memo dated July 20, 2021 prepared for another electrical generating unit facility.

(Revision) Source Test Submittals

Based on the latest instructions from Source Testing Section regarding source test submittals, the following conditions are removed from the modified permit (i.e., under Source Group *SOURCE TEST SUBMITTALS* in Section E. Source Group Restrictions).

- *15-Day Post-Test Notification.* No longer required. As per Source Testing Section, it does not need to be notified that the testing has been completed (i.e., since with pre-test notification & Source Testing Section has an option to send staff for stack test observation; also critical is the complete test report submission).
- *Paper Copies.* On July 29, 2021, Source Testing Section informed the Regional Offices that it goes paperless & will only need electronic submissions – i.e., through PSIM; if PSIMS is not available, through e-mail.

Miscellaneous Notes

Affordable Clean Energy (ACE) Rule – Vacated by EPA

The review memo dated December 15, 2020 for Homer City’s 2020 renewal permit documented that Homer City would be subject to the ACE rule, which added the *Emission Guidelines for Greenhouse Gas Emissions from Existing Coal-Fired Electric Utility Generating Units* (§ 40 CFR 60 Subpart UUUUa).

Status ^[a]

On January 18, 2021, the District of Columbia Circuit Court of Appeals vacated & remanded the EPA’s ACE rule “because its promulgation & its embedded repeal of the CPP rested critically on a mistaken reading of the Clean Air Act” (American Lung Assoc. & American Public Health Assoc. v. EPA, No. 19-1140). The Court also noted that EPA was correct to repeal the CPP. In the Court’s decision, it was also mentioned that: amendments to the implementing regulations extending the compliance timeline were vacated; petitions of the Coal Petitioners were denied (i.e., objections without merit); and petition of the Robinson Petitioners was dismissed (i.e., lacked standing). For details, see Court’s Opinion No. 19-1140.

^[a] The information above is adapted from review memo dated April 15, 2021 for a modified permit for another generating station.

New/Increased Air Quality Fees

All air quality applications, permits, RFDs and initial asbestos notifications are subject to new &/or increased fees. This increase in fees, which were last updated in January 2005, is the result of a three-year regulatory process. The final rulemaking, which was published & became effective on January 16, 2021, also includes an annual maintenance fee (replacing the annual administrative fee) for Natural Minor, Synthetic Minor & Title V permitted facilities. The new air quality regulations & supporting documents can be found on the following website:

- DEP Bureau of Air Quality Website:
<https://www.dep.pa.gov/Business/Air/BAQ/Pages/default.aspx>
- Final Rulemaking, Pennsylvania Bulletin (51 Pa.B. 283, January 6, 2021):
<http://www.pacodeandbulletin.gov/Display/pabull?file=/secure/pabulletin/data/vol51/51-3/78.html>

Any air quality application, RFDs or initial asbestos notification received on or after January 16, 2021 must be accompanied by the appropriate new or updated fees.

Recommendation

The proposed modified Title V Operating Permit is sent to Homer City & the EPA on October 15, 2021. The RACT II Notice for this modified permit will be published in Pennsylvania Bulletin on October 16, 2021. The Department instructed Homer City to publish the RACT II Notice in any local daily newspaper of general circulation for the area surrounding the facility for three consecutive days on or before October 16, 2021. In the notices is also the notice for public hearing, which will be held at 1:00 pm on November 17, 2021 at the DEP Northwest Regional Office. The last day to request for a hearing or to pre-register to speak at a hearing, if one is held, will be November 10, 2021. The public hearing will be cancelled if the Department does not receive any pre-registered speakers.

The issuance of the modified Title V Operating Permit for Homer City is recommended with all changes described in this review memo.

cc: Scott Dyll, New Castle District Office – Air Quality District Supervisor
Marilyn Blystone, New Castle District Office – Air Quality Specialist

Attachments

Attachment A. Permit Language on Emission Rate Calculation

Below is the permit language on calculation of daily average NOx emission rates & 30-operating day rolling average NOx emission rates.

To demonstrate compliance with the RACT II NOx limitations in Condition #001, the owner/operator shall monitor and test in accordance with the requirements of Chapter 139, Subchapter C (see Section E, Source Group BOILERS - NOX CEMS).

- (a) A daily average emission rate, in lb/MMBtu, will be calculated as per definition of DAILY AVERAGE in Condition #001 of this source group.*
- (b) For 30-operating day rolling average emission rates in lb/hr:
 - (1) A 30-operating day rolling average emission rate for each affected source will be calculated in accordance with the following procedure:
 - (A) Sum the total pounds of pollutant emitted from the combustion unit for the current operating day and the previous 29 operating days.*
 - (B) Sum the total hours of operation for the current operating day and the previous 29 operating days.*
 - (C) Divide the total number of pounds of pollutant emitted by the combustion unit for the 30 operating days by the total hours of operation for the 30 operating days.**
 - (2) A 30-operating day rolling average emission rate shall be calculated for each boiler for each operating day.**

Attachment B. Compliance Schedule for CEMS Certification

Below is the compliance schedule incorporated under Section C. Site Level Requirements, IX. Compliance Schedule of the modified Title V permit. The schedule is based on the latest version of the Continuous Source Monitoring Manual.

To have its Continuous Emissions Monitoring Systems (CEMS) certified for monitoring NOx emissions pursuant to Condition #001(a) of Source Group BOILERS - NOX CEMS in Section E. Source Group Restrictions, the permittee must submit a proposed CEMS monitoring plan pursuant to paragraph (a) below. Submission of the CEMS monitoring plan will initiate the CEMS certification process, which involves Performance Testing and Final Approval with compliance schedules pursuant to paragraph (b) & (c) below.

(a) INITIAL APPLICATION (Phase I)

A proposal containing information as listed in the Phase I section of the Department's Continuous Source Monitoring Manual (CSMM) for the proposed CEMS must be submitted to the Department no later than May 7, 2022 or within 180 days of issuance of the modified Title V operating permit, whichever comes later.

(b) PERFORMANCE TESTING (Phase II)

Testing as listed in the Phase II section of the Department's CSMM must be completed for the CEMS no later than 60 days after the approval of the proposed CEMS monitoring plan. The CEM Section must be advised in writing at least 45 days prior to Performance Specification Testing to provide the opportunity to observe and participate in all testing. A testing protocol, describing all testing procedures and methodology to be used must accompany the notice of testing. Schedule changes must be reported seven days prior to testing except that failed tests may be repeated immediately. During testing, the source must be operated in a manner that is representative of normal operating conditions. All other notifications and performance specification testing must be conducted in accordance with the Department's CSMM.

(c) FINAL APPROVAL (Phase III)

The final report of testing as listed in the Phase III section of the Department's CSMM must be submitted to the Bureau no later than 60 days after completion of the testing.