



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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STATIONARY SOURCE PERMIT TO OPERATE

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Virginia Electric and Power Company
5000 Dominion Boulevard
Glen Allen, Virginia 23060

is authorized to operate

Possum Point Power Station

located at

19000 Possum Point Road
Dumfries, Virginia
(Prince William County)

in accordance with the Conditions of this permit.

Approved on January 31, 2019.

Thomas A. Faha
Regional Director



Permit consists of 13 pages.
Permit Conditions 1 to 26.

INTRODUCTION/PURPOSE

This permit (i) is for the purpose of implementing the "reasonably available control technology" (RACT) requirements of 9VAC5-40-7400, 9VAC5-40-7420 and 9VAC5-40-7430 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution ("Regulations") and (ii) establishes control technology and other requirements for the control of volatile organic compounds (VOC) and nitrogen oxides (NOx) emissions from Possum Point Power Station located within the Virginia portion of the Ozone Transport Region. These RACT requirements shall be the legal and regulatory basis for control of VOC and NOx emissions from this facility. In addition, this facility may be subject to other applicable requirements not listed in this permit.

Words or terms used in this permit shall have meanings as provided in 9VAC5-10-10 of the Regulations. The regulatory reference or authority for each condition is listed in parenthesis () after each condition.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9VAC5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

EQUIPMENT LIST

Equipment at this facility subject to RACT requirements per this permit consist of the following:

Emission Unit ID	Emission Unit Description (Date of Installation)	Rated Capacity	Pollutant(s)a
ES-5	Unit 5-Tangentially-fired oil boiler-Combustion Engineering (1975)	8,500 mmbtu/hr	NOx

• Pollutant(s) listed for a listed emission unit is only as 9VAC5-40-7400, 9VAC5-40-7420 and/or 9VAC 5-40-7430 apply.

PROCESS REQUIREMENTS-UNIT 5 (ID # ES-5)

- 1. Emission Controls** - The permittee shall install and operate a selective non-catalytic reduction (SNCR) system on ES-5 by June 1, 2019 (Option A) OR shall enter into a written agreement with the Director, Northern Regional Office by June 1, 2019, to permanently retire ES-5 no later than June 1, 2021 (Option B). Failure to either install and operate an SNCR system on ES-5 by June 1, 2019, OR enter into a written agreement by June 1, 2019, to retire ES-5 by June 1, 2021, shall be a violation commencing June 1, 2019. Each day of operation shall constitute a separate violation.
(9VAC5-40- 7420 A)

Option A: Installation of SNCR

- 2. Emission Controls** - Commencing June 1, 2019, emissions of nitrogen oxides (NOx) from ES-5 shall be controlled by the use of low NOx burners, overfire air, flue-gas recirculation, and SNCR. The SNCR system shall reduce NOx in accordance with Condition 3 and Condition 4. The control devices shall be operating when ES-5 is operating.
(9VAC5-40-7420 A)
- 3. SNCR Operations** -The permittee shall develop and maintain operating curves for the injection rate of urea and reduction of NOx emissions to ensure the maximum possible reduction of NOx from ES-5 while ensuring that ammonia emissions are minimized to the extent practical. Operating curves shall be developed and shall be supplied to the Director, Northern Regional Office no later than 30 days after commissioning of the SNCR system on ES-5 is completed. After development of such curves, ES-5 shall be operated in accordance with the operating curves whenever the unit is operating.
(9VAC5-40-7420 A)
- 4. SNCR Monitoring Devices** - The SNCR system installed on ES-5 shall be equipped with devices to continuously measure and record the flowrate of urea to ES-5. Each such device shall be installed, maintained, calibrated, and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each such monitoring device shall be provided with adequate access for inspection and shall be in operation when ES-5 is operating.
(9VAC5-40-40, 9VAC5-80-850 and 9VAC 5-40-7420 A)

- 5. SNCR Projected Actual Emissions (Option A only)** - No project shall result in a major modification as defined in 9VAC5-80-1615 without receiving a permit pursuant to 9VAC5 Chapter 80 Article 8. For projects which rely on excluded emissions (subsection c of the definition of "projected actual emissions" in 9VAC5-80-1615) to be exempt from review under 9VAC5 Chapter 80 Article 8, the following conditions shall apply:
- a. The permittee shall maintain records sufficient to demonstrate that the project did not result in a major modification as defined in 9VAC5-80-1615. Any increase in emissions without sufficient documentation shall be attributed to the project.
 - b. If annual emissions after the project (12 month rolling total) exceed the "baseline actual emissions" (as defined in 9VAC5-80-1615) for the project by a "significant" amount (as defined in 9VAC5-80-1615), the permittee shall notify the Northern Regional Office within fifteen (15) days after the event.

For each applicable project, Conditions 5.a and 5.b are effective for the project period as prescribed in the definition of "projected actual emissions" located in 9VAC5-80-1615. Nothing in this condition shall restrict when the Board may find the permittee in violation of 9VAC5-80-1625 A.
(9VAC5-80-1180 A)

Option B: ES-5 Retirement

- 6. SNCR Emission Controls/Unit Retirement-The** requirements for the installation of the SNCR system (Option A) in Condition 2 and the operation and monitoring of the SNCR system in Condition 3 and Condition 4 are null and void if all of the following conditions are met:
- a. The permittee submits all necessary notifications to the Regional Transmission Organization (RTO) for retirement of ES-5. Copies of such notifications shall be provided to the Director Northern Regional Office within 30 days of submittal by the permittee or 30 days after the effective date of this permit, whichever is later. Copies of responses to such notifications shall be provided to the Director Northern Regional Office within 30 days of receipt by the permittee or 30 days after the effective date of this permit, whichever is later. The retirement date of ES-5 shall be no later than June 1 2021;and

- b. The permittee enters into and maintains a written agreement with the Director, Northern Regional Office for a mutual determination of permanent shutdown for ES-5 under 9VAC5-20-220 no later than June 1, 2019. The permanent shutdown of ES-5 shall occur no later than June 1, 2021.
(9VACS-40-7420 A and 9VAC5-20-220)

OPERATING LIMITS

7. **Operating Limitations** - Commencing upon permit issuance and concluding at the successful completion of commissioning of the SNCR system (Option A) or the permanent shutdown of ES-5 (Option B), the permittee shall operate ES-5 during the ozone season (April 1 through October 31) only under the following constraints:
 - a. ISO-Declared Emergencies - ES-5 may operate if called upon by PJM in the event of an ISO-declared emergency. An ISO-declared emergency means a condition that exists when the independent system operator, as defined in § 56-576 of the Code of Virginia, notifies electric utilities that an emergency, as defined in the ISO's emergency operations manual, exists or may occur.
 - b. Required Unit Testing - ES-5 may operate to perform required unit testing that involves fuel combustion. Testing that does not involve fuel combustion shall be permitted at any time. Such testing shall only be performed, and the unit operated for that testing, if the forecast Air Quality Index (AQI) for ozone as published on the AirNow website (<https://airnow.gov>) for Metropolitan Washington, D.C. for that day is less than or equal to 100. The permittee shall make every effort to perform necessary testing outside of the ozone season and minimize the duration of operations during the ozone season for the purposes of required testing. The details of the testing are to be arranged with the Director, Northern Regional Office. The permittee shall submit a plan for testing of the unit no later than March 1, 2019. The plan shall be submitted to the Director, Northern Regional Office. At a minimum, the plan shall identify and provide justification for testing that requires the operation of ES-5 during each ozone season (April 1 through October 31, 2019 through 2021) and shall include consideration of weather conditions appropriate for testing. In the event that AirNow-EnviroFlash (www.enviroflash.info) issues an Air Alert for Metropolitan Washington, D.C. for a testing day when the forecasted AQI for ozone was less than or equal to 100, operations and NOx emissions of ES-5 shall be minimized to the maximum extent practical.

- c. PJM Dispatch, Non-Ozone Alert Days - ES-5 may operate if called upon by PJM to operate and the AQI forecast for ozone as published on the AirNow website for Metropolitan Washington, D.C. for that day of operations is less than or equal to 100.
- d. PJM Dispatch, Ozone Alert Days - If called upon by PJM to operate during a day that is not an ISO-declared emergency, ES-5 shall limit generation to no greater than 330 megawatts (MW) in the following circumstances during the ozone season (April 1 through October 31):
 1. If the Metropolitan Washington, D.C. AQI forecast for ozone for that day is greater than 100 but the forecast for that day is not published on the AirNow website by 10:00 am Eastern Daylight Time the preceding day; or
 11. If AirNow-EnviroFlash issues an Air Alert for Metropolitan Washington, D.C on the day of operation. In this situation, if ES-5 is operating above 330 MW, the unit shall be brought down as expeditiously as practical and operated at no greater than 330 MW.

(9VAC5-40-7420 A)

EMISSION LIMITS

- 8. Process Emission Limits** -NO_x emissions from the operation of ES-5 shall not exceed the limitation specified below until the installation and operation the SNCR system:

Nitrogen Oxides (as NO₂)

0.25 lbs/million BTU on a 30 day rolling average basis, calculated daily*.

*Compliance with this limitation shall be determined by CEMS in accordance with Condition 11.

(9VAC5-40-7410 A and 9VAC5-40-7420 A)

- 9. SNCR Process Emission Limits (Option A only)**- NO_x emissions from the operation of ES-5 shall not exceed the limitation specified below after commissioning of the SNCR system:

Nitrogen Oxides (as NO₂)

0.17 lbs/million BTU on a 24-hour rolling average basis*.

*Compliance with this limitation shall be determined by CEMS in accordance with Condition 11.

(9VAC5-40-7420 A)

MONITORING/TESTING

- 10. CEMS** - Continuous Emission Monitoring Systems meeting the design specifications of 40 CFR Part 75 shall be installed to measure and record the emissions of NO_x from ES-5 as lbs/million BTU. The CEMS shall be installed, calibrated, maintained, audited, and operated in accordance with 40 CFR Part 75. Data shall be reduced to 24-hour rolling averages and/or 30-day rolling averages using procedures approved by the Director, Northern Regional Office. For purposes of demonstrating compliance with Condition 8, a valid 30-day rolling average shall consist of all valid data points during the most recent 30 operating-day period. An operating day shall be one in which the unit operated at least one hour. Performance evaluations of the continuous monitoring systems shall be conducted in accordance with 40 CFR Part 75.
(9VACS-50-40)
- 11. CEMS** - The continuous emissions monitoring data generated by the NO_x monitor shall be used to determine compliance with the emission standards in Condition 8 or Condition 9, as applicable.
(9VACS-50-40)

NOTIFICATIONS, RECORDS AND REPORTING

12. Initial Notifications of SNCR Commissioning (Option A only) -The permittee shall furnish written notification of the items below to the Director, Northern Regional Office:

- a. The date that commissioning of the SNCR system commenced on ES-5, postmarked no later than 15 days after such date; and
- b. The date that commissioning of the SNCR system was completed on ES-5, postmarked no later than 15 days after such date.

(9VAC5-50-50)

13. On Site Records - The permittee shall maintain records of emissions data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Regional Air Compliance Manager of DEQ's Northern Regional Office. These records shall include, but are not limited to:

- a. Until ES-5 is retrofitted with the SNCR system in accordance with Condition 2 (Option A) or prior to the retirement of ES-5 in accordance with Condition 6 (Option B), the permittee shall keep the following records for operations during the ozone seasons (April 1 through October 31):
 1. Records for ES-5 demonstrating days when the unit operated and the reason for operating (testing, PJM ISO emergency, or PJM dispatch).
 11. The forecasted AQI for ozone for the operating day, as determined by the AirNow website for Metropolitan Washington, D.C.
 111. The measured AQI for ozone for the operating day, as determined by the AirNow website for Metropolitan Washington, D.C.
 - 1v. Documentation recording any Air Alerts issued for that operating day, as determined by AirNow-EnviroFlash (www.enviroflash.info).
 - v. Maximum hourly gross generation in MW on that operating day.
 - v1. A description of any efforts to reduce generation to 330 MW or lower on that operating day in accordance with Condition 7.d, including start time and time when a production level of 330 MW or lower was achieved.
 - vII. CEMS data and calculation methodology demonstrating compliance with the emission rate provided in Condition 8.

- b. After ES-5 is retrofitted with selective non-catalytic reduction (Option A), the permittee shall keep the following records:
1. CEMS data and calculation methodology demonstrating compliance with the emission rate provided in Condition 9.
 11. Operating curves for the SNCR system on ES-5.
 111. Hourly records during periods of operation of urea injection rate and maximum hourly gross production rate in MW.

These records shall be available for inspection by DEQ and shall be current for the most recent five years.

(9VAC5-40-50 and 9VAC5-80-900)

14. Annual Reports - Upon permit issuance and prior to the installation of the SNCR system in accordance with Condition 2 (Option A) or prior to the retirement of ES-5 in accordance with Condition 6 (Option B), the permittee shall submit the following reports to the Director Northern Regional Office, postmarked no later than November 30 following the end of each ozone season (April 1 through October 31):

- a. Records for ES-5 for each day when the unit operated and the reason for operation during the most recent ozone season (April 1 through October 31) in accordance with Condition 13.a.i;
- b. The maximum hourly gross generation in MW and efforts undertaken to limit generation to 330 MW or lower for each day ES-5 operated during the ozone season (April 1 through October 31) in accordance with Condition 7.d. and Condition 13.a.
- c. Forecasted and measured AQI for ozone for all days ES-5 operated during the ozone season (April 1 through October 31) in accordance with Condition 13.a.;
- d. Records of any Air Alerts for all days ES-5 operated during the ozone season (April 1 through October 31) in accordance with Condition 13.a.;
- e. CEMs data and calculation methodology to determine compliance with the emission limitation in Condition 8.

(9VACS-40-50 and 9VACS-80-900)

15. Annual Reports -After the installation of the SNCR system (Option A), the permittee shall submit the following data in an annual report to the Director Northern Regional Office, postmarked no later than January 30th of the following year:

- a. CEMS data to determine compliance with the emission rate provided in Condition 9 for all operating periods during the preceding year.
- b. Records of urea injection rate and production data during periods of operation in accordance with Condition 13.b.

(9VAC5-40-50 and 9VACS-80-900)

GENERAL CONDITIONS

- 16. Permit Limitations** -Except to the extent that conditions in this permit may be more stringent, this permit does not supersede or replace any other valid permit, regulatory, or statutory requirement. Furthermore, this approval to operate shall not relieve Virginia Electric and Power Company of the responsibility to comply with all other local, state and federal regulations, including permit regulations.
(9VAC5-80-850)
- 17. Federal Enforceability** - Once the permit is approved by the U.S. Environmental Protection Agency into the Commonwealth of Virginia State Implementation Plan, the permit is enforceable by the U.S. Environmental Protection Agency and citizens under the federal Clean Air Act.
(9VAC5-80-850)
- 18. Permit Revision/Repeal** - The Board may revise (modify, rewrite, change or amend) or repeal this permit with the consent of Virginia Electric and Power Company for good cause shown by Virginia Electric and Power Company, or on its own motion provided approval of the revision or repeal is accomplished in accordance with Regulations of the Board and the Administrative Process Act (§ 2.2-4000 *et seq.*). Such revision or repeal shall not be effective until the revision or repeal is approved by the U.S. Environmental Protection Agency following the requirements of 40 CFR Part 51 (Requirements for Preparation, Adoption, and Submittal of Implementation Plans).
(9VAC5-80-850)
- 19. Failure to Comply**- Failure by Virginia Electric and Power Company to comply with any of the conditions of this permit shall constitute a violation of a Permit of the Board. Failure to comply may result in a Notice of Violation and civil penalty. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of orders as appropriate by the Board as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.
(9VAC5-80-850)
- 20. Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:
- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
 - c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(9VAC5-170-130 and 9VACS-80-850)

- 21. Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Regional Air Compliance Manager of DEQ's Northern Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Regional Air Compliance Manager of DEQ's Northern Regional Office in writing.
(9VACS-20-180 C and 9VAC5-80-850)

- 22. Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9VAC5-20-180 I and 9VAC5-80-850)

- 23. Maintenance/Operating Procedures** - At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to the ES-5:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such

equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9VACS-50-20 E and 9VACS-80-850)

24. Permit Suspension/Revocation - This permit may be revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the terms or conditions of this permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit;
- d. Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard;
- e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time that an application for this permit is submitted;
- f. Fails to comply with the applicable provisions of Articles 6, 8 and 9 of 9 VAC 5 Chapter 80.

(9VACS-80-1010)

25. Change of Ownership - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Regional Air Compliance Manager of DEQ's Northern Regional Office of the change of ownership within 30 days of the transfer.

(9VACS-80-940)

26. Permit Copy - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.

(9VACS-80-860 D)