

**COMMONWEALTH of VIRGINIA****DEPARTMENT OF ENVIRONMENTAL QUALITY**

Piedmont Regional Office

4949-A Cox Road

Glen Allen, Virginia 23060-6296

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Peter W. Schmidt
DirectorGerard Seeley, Jr.
Regional Director**CONSENT AGREEMENT****WITH**

Virginia Electric and Power Company
D/B/A Virginia Power
Innsbrook Technical Center
5000 Dominion Boulevard
Richmond, Virginia 23060

Registration No. 50396

SECTION A: Purpose

This Agreement establishes a Reasonably Available Control Technology (RACT) standard for the Virginia Electric and Power Company Chesterfield Power Station for the control of volatile organic compound (VOC) emissions in the Richmond Ozone Nonattainment Area as required by Section 120-04-0407 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This RACT standard shall be the basis for VOC emissions control for this plant.

SECTION B: References

Unless the context indicates otherwise, the following words and terms have the meanings assigned to them below:

"Agreement" means this Consent Agreement.

"Board" or "SAPCB" means the State Air Pollution Control Board, a collegiate body of the Commonwealth of Virginia described in § 10.1-1301 of the Code. Particular powers and duties of the Board are described in Section C of this document.

"Code" means the Code of Virginia.

"DEQ" or "Department" means the Department of Environmental Quality, an agency of the Commonwealth described in § 10.1-1183 of the Code.

"Director" means the Director of the Department of Environmental Quality. Particular powers and duties of the Director are described in Section C of this document.

"EPA" means the United States Environmental Protection Agency.

"Good Combustion Practices" means those combustion practices which are commonly recognized in the utility industry as essential to maintain optimal performance while operating in compliance with all emission limits and include, but are not limited to, reasonable vigilance of the operating parameters and reasonable preventative maintenance.

"Major Stationary Source" means any stationary source with a theoretical potential to emit of 100 tons or more per year of any criteria pollutant.

"Modification" means any physical change in, change in the operation of, or addition to, any emissions unit which would subject the source to permitting requirements under Part VIII of the Regulations.

"New Source Review Program" means a program for the preconstruction review and permitting of new stationary sources or expansions to existing ones in accordance with regulations promulgated to implement the requirements of §§110 (a) (2) (C), 165 (relating to permits in prevention of significant deterioration areas) and 173 (relating to permits in nonattainment areas) of the federal Clean Air Act.

"Non-CTG" means a source type for which the EPA has not issued a Control Technique Guideline (CTG), and thus has not established RACT for that source type.

"Percent Load" means the actual load expressed as a percentage of the gross seasonal (summer or winter) generating capacity of the unit, as given in the latest annual edition of Virginia Power's report, "Long-Range Forecast of Load and Resources."

"Reasonably Available Control Technology" or "RACT" means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

"Regional Director" means the Director of the Piedmont Regional Office of the Department of Environmental Quality, 4949-A Cox Road, located in Glen Allen, Virginia.

"SAPCB Regulations" or "Regulations" means the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution.

"SIP" means the State Implementation Plan.

"Theoretical potential to emit" means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. It is based on emissions at design capacity or maximum production and maximum operating hours (8,760 hours per year) before add-on controls, unless the source is subject to state and federally enforceable permit conditions which limit production rates or hours of operation.

"Virginia Power" or "affected facility" means Virginia Electric and Power Company, Chesterfield Power Station, located at the end of Coxendale Road, State Route 615, Chester, Virginia.

"VOC" means volatile organic compounds as defined by Section 120-01-02 of the SAPCB Regulations.

SECTION C: Authority

1. Chapter 13 of Title 10.1 of the Code creates the Board and vests in it the authority to supervise and control various aspects of air pollution in the Commonwealth. Among the Board's powers is the authority to promulgate regulations "abating, controlling and prohibiting" air pollution, found in § 10.1-1308 of the Code.
2. Pursuant to its authority, the Board has promulgated the SAPCB Regulations, which first took effect March 17, 1972 and have been periodically amended.
3. Pursuant to § 10.1-1307 D of the Code, the Board has the authority to issue orders to diminish or abate the causes of air pollution and to enforce its regulations. Orders of the Board are enforceable pursuant to §§ 10.1-1316 and 10.1-1320 of the Code.
4. The Director is the executive officer of the Board. Under § 10.1-1307.2 A of the Code, the Director is to perform those duties required of him by the Board. Additionally under § 10.1-1307.3 of the Code, the Director has such powers to supervise, administer and enforce the provisions of Chapter 13 of Title 10.1 of

the Code, as well as the regulations and orders of the Board, as are conferred upon him by the Board. The powers and duties conferred and imposed upon the Director under §§ 10.1-1307.2 and 10.1-1307.3 of the Code are continued under § 10.1-1185 of the Code.

5. Under § 10.1-1307.2 B of the Code, the Director may be vested with the authority of the Board when it is not in session, subject to such regulations or delegation as may be prescribed by the Board. Appendix F of the SAPCB Regulations contains the Delegation of Authority from the Board to the Director. In Section II A of Appendix F the Director is given the authority, with some exceptions, to act for the Board when it is not in session and to issue consent orders and emergency special orders.

SECTION D: Findings

1. Virginia Power operates Chesterfield Power Station, a power generating facility located at the end of Coxendale Road, State Route 615, in Chesterfield County, Virginia.
2. In the 1985 SIP revision, the DEQ made a commitment to establish emissions standards in accordance with EPA policy, requiring RACT for all non-CTG major stationary sources of VOC emissions in the Richmond Ozone Nonattainment Area which, at the time, included the County of Chesterfield.
3. Section 120-04-0407 of the SAPCB Regulations, which became effective on July 1, 1991, requires RACT for all non-CTG major stationary sources of VOC emissions in the expanded Richmond Ozone Nonattainment Area, which includes the County of Chesterfield.
4. Virginia Power is a non-CTG major stationary source of VOC emissions in the Richmond Ozone Nonattainment Area.
5. Virginia Power submitted notification of its eligibility for RACT in a letter dated October 1, 1991. In that letter, Virginia Power also committed to making a determination of RACT and submitted a schedule for determining RACT.
6. In a letter dated April 1, 1992, Virginia Power notified the Department that it had completed a search for RACT technologies, and was unable to identify any add-on technology which would be applicable to the Chesterfield Power Station boilers or gas turbines as RACT.

7. On February 23, 1993, the Board notified Virginia Power of the requirement to develop a RACT standard for VOC emissions from the affected facility.
8. In a letter dated March 29, 1993, Virginia Power took the position that Virginia Power's inability to identify any RACT add-on technologies for the Chesterfield Power Station facilities satisfied the requirements of Section 120-04-0407 of the SAPCB Regulations.
9. The Department notified Virginia Power of the Department's requirement for Virginia Power to submit a RACT analysis to the Department for the affected facility in a letter dated May 28, 1993.
10. Virginia Power performed a RACT analysis, and submitted drafts of the analysis to the Department on September 30, 1993, July 1, 1994, January 20, 1995, May 1, 1995, and December 5, 1995.
11. In response to DEQ comments, Virginia Power submitted a revised VOC RACT analysis dated December 22, 1995.
12. Virginia Power determined and presented in its revised RACT Analysis that the theoretical potential to emit VOC emissions from the Chesterfield Power Station is as follows:

<u>Unit No.</u>	<u>Source Type</u>	<u>VOC Emissions (tons/year)</u>
Various	Fuel Tanks	
3	Boiler, Coal-fired	4.5
4	Boiler, Coal-fired	14.2
5	Boiler, Coal-fired	21.6
6	Boiler, Coal-fired	44.2
7	Combined Cycle Gas Turbine	81.6
8	Combined Cycle Gas Turbine	76.7 *
ETG-1A	Emergency Gas Turbine, #2 oil	0.4
ETG-1B	Emergency Gas Turbine, #2 oil	0.4
	Emergency Diesel Generator	3.0
	Coal Thawing Heaters, LPG	0.9
Total		<u>324.2</u>

* based on 17.5 lbs VOC/hr PSD permit limit, 8760 hrs/year.

13. The EPA DRAFT Control Techniques Guidelines Document for VOC and Petroleum Liquid Storage Tanks was not finalized prior to the deadline for RACT implementation. Rule 4-37 of the Regulations is applicable to the storage tanks at the Virginia Power Chesterfield Power Station facility or the storage

tanks are exempt from that rule by size or vapor pressure. The affected facility storage tanks were inspected on March 11, 1994 and found to be in compliance with all applicable Regulations.

14. It is not technically feasible to control VOC emissions from the four coal-fired boilers with add-on control equipment. Therefore, RACT for the coal-fired boilers is determined to be good combustion practices.
15. Virginia Power determined and presented in its revised RACT Analysis dated December 22, 1995 that on the basis of stack testing that the actual potential to emit and the maximum expected VOC emissions for the combined cycle gas turbines are significantly less than the theoretical potential to emit VOC emissions and are as follows:

<u>Unit No.</u>	<u>Source Type</u>	<u>VOC Emissions (tons/year)</u>
7	Combined Cycle Gas Turbine	12.7 *
8	Combined Cycle Gas Turbine	4.8 *

* based on 8760 hours; worst case fuel (#2 fuel oil)

16. Based upon maximum expected VOC emissions for the combined cycle gas turbines, the cost per ton to implement the only technically feasible candidate technology for VOC RACT (catalytic oxidation) is at least \$67,691 and \$178,637 (for Units 7 and 8, respectively). It is therefore considered not cost effective to control VOC emissions from the combined cycle gas turbines with this technology. RACT is determined to be no additional controls for these units.

17. VOC emission testing was completed on the combined cycle gas turbines (Unit 7 on May 26, 1990 and on Unit 8 on April 28, 1992) and demonstrated compliance with permit VOC emission limits of 0.0103 lbs per MMBtu and 17.5 lbs per hour which had been made federally enforceable in a PSD/Nonattainment permit dated December 28, 1987 (as amended April 25, 1988).

18. Virginia Power determined and presented in its revised RACT Analysis that on the basis of maximum annual usage of 728 hours per year (operating at capacity, for the equivalent of 8 hours per day, 7 days per week, and 13 weeks per year) the maximum expected VOC emissions for the coal thawing heaters are 0.08 tons per year, significantly less than the 0.9 ton per year theoretical potential to emit VOC.

19. As indicated in the revised RACT Analysis, the Emergency Gas Turbines are emergency equipment, and except for testing, have not been used in years. Based upon a maximum of 500 hours of testing and operation for each turbine every year, the maximum expected VOC emissions are 0.02 tons per year per turbine, significantly less than the 0.4 tons per year theoretical potential to emit VOC.
20. As indicated in the revised RACT Analysis, the Emergency Generator is emergency equipment. Based upon a maximum of 500 hours of testing and operation of the generator every year, the maximum expected VOC emissions are 0.17 tons per year, significantly less than the 3.0 tons per year theoretical potential to emit VOC.
21. VOC emissions from the coal thawing heaters, emergency diesel generator, and the emergency gas turbines are determined to be negligible for the purposes of determining RACT. RACT for these sources is determined to be no control.
22. Pre-RACT maximum expected VOC emissions from the Virginia Power facility are predicted to be:

<u>Unit No.</u>	<u>Source Type</u>	<u>VOC Emissions (tons/year)</u>
Various	Fuel Tanks	
3	Boiler, Coal-fired	4.5
4	Boiler, Coal-fired	14.2
5	Boiler, Coal-fired	21.6
6	Boiler, Coal-fired	44.2
7	Combined Cycle Gas Turbine	81.6
8	Combined Cycle Gas Turbine	12.7
ETG-1A	Emergency Gas Turbine, #2 oil	4.8
ETG-1B	Emergency Gas Turbine, #2 oil	neg.
	Emergency Diesel Generator	neg.
	Coal Thawing Heaters, LPG	neg.
Total		<u>183.6</u>

23. Maximum expected VOC emissions from the Virginia Power Chesterfield Power Station after implementation of RACT would be:

<u>Unit No.</u>	<u>Source Type</u>	<u>VOC Emissions (tons per year)</u>
Various	Fuel Tanks	
3	Boiler, Coal-fired	4.5
4	Boiler, Coal-fired	14.2
5	Boiler, Coal-fired	21.6
		44.2

<u>Unit No.</u>	<u>Source Type</u>	<u>VOC Emissions (tons per year)</u>
6	Boiler, Coal-fired	81.6
7	Combined Cycle Gas Turbine	12.7
8	Combined Cycle Gas Turbine	4.8
ETG-1A	Emergency Gas Turbine, #2 oil	neg.
ETG-1B	Emergency Gas Turbine, #2 oil	neg.
	Emergency Diesel Generator	neg.
	Coal Thawing Heaters, LPG	<u>neg.</u>
Total		183.6

This represents no change in the VOC emissions from the Chesterfield Power Station due to the implementation of RACT.

SECTION E: Agreement

Accordingly, the Board and Virginia Power agree that:

1. VOC emissions from the affected facility shall be controlled and reduced as outlined in this Agreement.
2. VOC emissions shall be controlled from the boilers 3, 4, 5, and 6 by good combustion practices. Compliance with this requirement shall be demonstrated by implementation of a Work Planning and Tracking System (WPTS) as described in Paragraph E.3.
3. In order to minimize the duration and frequency of excess emissions due to malfunctions of process equipment or air pollution control and monitoring equipment, Virginia Power shall implement a Work Planning and Tracking System capable of scheduling planned maintenance and shall implement a recordkeeping system for operation, malfunctions and continuous monitoring and all completed scheduled and unscheduled maintenance, with the exception of minor repairs initiated and performed by individual employees in the conduct of their routine duties. These records shall include, but are not limited to, all of the following:
 - a. the maintenance schedule.
 - b. scheduled and unscheduled maintenance records.
 - c. dates and duration of outages.
 - d. total annual hours of operation for the coal thawing heaters, the emergency turbines and the emergency generator.

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

4. Virginia Power shall comply with all of the requirements of this Agreement no later than May 31, 1996 and continue to comply with the requirements of this Agreement thereafter as long as this Agreement is effective.
5. At any time in the future, should Virginia Power plan any modifications (within the context of the new source review program) of the affected facility covered by this Agreement, Virginia Power shall have the right to apply to the Board for a new source review permit and the Board may consent to such modifications provided such modifications will meet all of the new source review permit program regulatory requirements in existence at that time.
6. The Board may modify, rewrite, or amend this Agreement with the consent of Virginia Power, for good cause shown by Virginia Power, or on its own motion provided approval of the changes is accomplished in accordance with applicable requirements of SAPCB regulations, the Administrative Process Act (§ 9-6.14:1 et. seq.) and 40 CFR Part 51 (Requirements for Preparation, Adoption, and Submittal of Implementation Plans).
7. So long as this Agreement remains in effect, Virginia Power waives the right to any hearing pursuant to §§ 9-6.14:11 and 9-6.14:12 of the Code and to judicial review of any issue of fact or law contained herein. Nothing herein, however, shall be construed as a waiver of the right to a hearing or to judicial review of any action taken by the Board to enforce this Agreement.
8. Failure by Virginia Power to comply with any of the terms of this Agreement shall constitute a violation of an Order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional 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.
9. Virginia Power declares it has received fair and due process under the Administrative Process Act (§ 9-6.14:1 et. seq.).

10. This Agreement shall become effective upon signature by both parties and shall continue in effect indefinitely or until otherwise terminated by the Board.

The foregoing Consent Agreement has been executed on behalf of the STATE AIR POLLUTION CONTROL BOARD of the COMMONWEALTH OF VIRGINIA and on behalf of VIRGINIA ELECTRIC AND POWER COMPANY, each by its duly authorized representatives, or self, on the dates indicated below.

DEPARTMENT OF ENVIRONMENTAL QUALITY
OF THE COMMONWEALTH OF VIRGINIA

5/31/96
(date) BY: *Peter W. Schmidt*
Peter W. Schmidt
Director

May 13, 1996
(date) BY: *William R. Cartwright*
William R. Cartwright
Senior Vice President - Fossil
and Hydro

COMMONWEALTH OF VIRGINIA
COUNTY OF HENRICO

The foregoing instrument was acknowledged before me this 13th day of May, 1996, by William R. Cartwright, Senior Vice President - Fossil and Hydro, of Virginia Electric and Power Company, a Virginia Corporation, on behalf of the Corporation.

My commission expires July 31, 1997.

Mildred H. Snow
Notary Public