



## Mirant Potomac River power plant information

The Air Pollution Control Board will consider Mirant at the next board meeting on March 26, 2007. The following documents have been provided to the board.

- Permit options
  - Draft consent order (March 2007)
    - Appendix 1
    - Appendix 2
    - Appendix 3
- Memo to board
  - Draft permit
  - Analysis
  - Attachments
    - 1998 consent agreement on nitrogen oxides
    - 2000 permit on volatile organic compounds
    - 2003 permit on acid rain
    - 2003 permit on nitrogen oxides
    - Emissions calculations
    - List of documents

The Mirant Potomac River power plant in Alexandria shut down in August 2005 after being directed by DEQ to take immediate steps to protect human health and the environment. The directive was a result of a Mirant study that shows significant violations of air quality standards near the plant under certain conditions.

Mirant resumed operations of one boiler unit at the plant in September, and DEQ found no indication that Mirant's plan of limited operation of the unit violates federal health-based air quality standards. In November 2005, DEQ approved a proposal by Mirant to test new emissions reduction technology at the Potomac River power plant in Alexandria. The agency continues to monitor operations at the Alexandria plant and remains in communication with Mirant about efforts to meet air quality standards.

The Department of Energy has also published documents and communications related to the Mirant matter on its web site.

- 1/5/2006 DEQ objects to Pepco's planned power outages
- 12/30/2005 Mirant operating plan for Potomac River plant
- 12/20/2005 Department of Energy order concerning operation of Mirant plant
- 10/21/2005 EPA Letter to Rep. James Moran
- 10/27/2005 DEQ response to Mirant proposal
- 10/14/2005 Mirant proposal to DEQ
- 10/11/2005 DEQ motion to Federal Energy Regulatory Commission
- 9/21/2005 Governor Warner's letter to Mirant



9/20/2005 [DEQ responds to proposed plant restart](#)

9/20/2005 [Mirant announces restart of Potomac River plant \(includes modeling study\)](#)

8/19/2005 [DEQ directs air quality improvement at Mirant plant](#)

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Last Updated: March 21, 2007

## **Mirant Permitting Options**

Pursuant to a state consent order dated September 23, 2004 Mirant was required to perform a modeling analysis to predict the effect of "downwash" from the Potomac River Generating Station (PRGS) on ambient concentrations and to assess compliance with all of the National Ambient Air Quality Standards (NAAQS). The study showed modeled exceedences of three NAAQS pollutants from downwash: sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and particulate matter finer than 10 µm in aerodynamic diameter (PM<sub>10</sub>).

The facility is currently operating under a federal Administrative Consent Order (ACO) issued by EPA that allows the plant to conduct a Model Evaluation Study (MES) that allows for daily predictive modeling to determine levels of operation that do not contribute to a modeled NAAQS violation for the pollutants SO<sub>2</sub> and PM<sub>10</sub> and contains a 3700 ton annual limit for NO<sub>x</sub>. The plant is required to collect the next day's predicted meteorological conditions for the Reagan National Airport from the National Weather Service and use them along with planned operating parameters as input to conduct computer modeling runs for the following day. If the modeling confirms that Mirant's planned operation for the following day will not cause or contribute to a modeled NAAQS exceedence, Mirant may operate for the day in accordance with the modeled operating parameters. If the predictive modeling indicates that the planned operating parameters will result in one or more modeled NAAQS exceedences, Mirant must adjust their operating parameters in a manner that will not result in a modeled NAAQS exceedence. The results of the MES will be used to develop an air dispersion model that is more representative of what is happening with the air flow around the plant. Mirant also has the option of complying with emission rates established in Table 1 of the EPA ACO instead of conducting the daily predictive modeling. Table 1 of the EPA ACO includes multiple operating constraints established by EPA which are believed to be protective of the NAAQS and are more conservative than the daily predictive modeling approach. However, the EPA ACO allows Mirant to operate the PRGS to produce the amount of power as specified by PJM (the regional transmission organization) to meet load demand during times of line outages when one or both transmission lines serving the central Washington D.C. area are out of service regardless of the NAAQS modeling results and the Table 1 operating constraints. This provision was included with DOE's support. In a letter to Mirant of June 2, 2006, one day after the effective date of the EPA ACO, DOE stated, "Operation pursuant to the ACO, in particular under the Model Evaluation Study is necessary in order for Mirant to comply with [DOE's Order] and to assure an adequate level of electric reliability...." The EPA ACO was signed on June 1, 2006 and expires on June 1, 2007. This is a creative and unprecedented approach developed by EPA to help balance DOE's need for electric reliability with the requirements of the Clean Air Act. Monitoring results have shown it to be generally protective of public health with actual emissions routinely in the range of 10% to 30% of NAAQS.

Mirant has proposed to merge the existing 5 units' stacks at the PRGS into 2 existing stacks to reduce downwash conditions predicted to occur under certain weather conditions and mitigate modeled NAAQS exceedences. Combining 2 or 3 of the exhaust streams will result in increased gas volumes and associated higher exit velocities which Mirant hopes will create a higher rise of all gases and emissions into the atmosphere and thus creating better dispersion and lessening the potential downwash impacts.

The stack merge project consists of several components. The exhausts from the two cycling units (units C1 and C2) will be merged to exit from what is currently the stack for unit C1.

The exhausts from the three base load units (C3, C4, and C5) will be merged and will exit from what is currently the stack for unit C4. Units were grouped together based on similar load profiles. The stacks for units C2, C3, and C5 will no longer be used but will remain in place. Stacks for units C1 and C4 will require modifications to complete the stack merge. New common ductwork will be installed connecting the individual unit exhaust fan discharges. All of the ductwork will be installed inside the existing plant structure and not be visible from the ground.

Currently there are 2 exhaust fans per unit. All of the exhaust fans will be replaced with larger capacity fans and motors capable of operating in combination with the other units' fans to direct the exhaust gases from the individual units through the new ductwork into the common stack. Existing power and control cables will also be replaced in order to accommodate the larger fans and motors.

The State Air Pollution Control Board (SAPCB) has requested the DEQ to present a range of permitting options at the March 26, 2007 meeting that will ensure that the PRGS is operating in a manner that does not result in modeled NAAQS exceedences after the EPA ACO expires in June. Litigation by either party (Mirant or City) is a possibility under every option.

The following permitting options are planned to be presented to the Air Board:

**Option 1 – State Operating Permit**

The SAPCB may approve a State Operating Permit (SOP) under Chapter 80 Article 5 of the Regulations for the Control and Abatement of Air Pollution (The Regulations) that incorporates the operating scenarios and emission rates established in Table 1 of the EPA ACO. The facility will be required to demonstrate through ambient air quality modeling that all short term and annual emission rates do not result in modeled exceedences of any NAAQS. The emission rates in Table 1 of the EPA ACO have been determined by EPA to be protective of the NAAQS. This SOP will limit the operations of the plant and does not allow Mirant to conduct daily predictive modeling to determine plant operations. Also, the SOP will not include a provision allowing Mirant to operate PRGS in a manner that demonstrates a modeled NAAQS exceedence due to specifications by PJM (e.g. basing compliance on monitors rather than modeling).

**Option 2 – DEQ Consent Order, Minor NSR Permit, and State Operating Permit effective upon completion of the stack merge**

The SAPCB may approve a Consent Order (CO) with Mirant in conjunction with issuing a Minor NSR permit under Chapter 80 Article 6 of The Regulations which authorizes the company to merge the stacks during the scheduled fall 2007 plant outage. The purpose of the DEQ CO will be to regulate short-term emissions from the plant from the time the EPA ACO expires until a permit is issued with NAAQS-protective emission limits. The DEQ CO will contain similar provisions as the EPA ACO which will allow the facility to determine operations based on daily predictive modeling so that short term NAAQS exceedences are avoided. The DEQ CO, however, will contain several provisions that will make it more stringent than the EPA ACO.

The DEQ CO will require predictive modeling for the toxics HCl and HF in addition to SO<sub>2</sub> and PM<sub>10</sub>, as well as four additional SO<sub>2</sub> monitors and three PM<sub>2.5</sub> monitors (the EPA ACO requires no PM<sub>2.5</sub> monitors). Moreover, the DEQ CO will not shield Mirant from enforcement

in the event the plant's emissions cause a monitored exceedance of the NAAQS while it is operating pursuant to an order from DOE or PJM. The DEQ CO will become effective upon the expiration of the EPA ACO on June 1, 2007, and will expire upon issuance of a permit by DEQ that contains short term emission rates that demonstrate modeled compliance with the NAAQS. The Minor NSR permit will contain emission limits that have been demonstrated to be protective of the NAAQS on an annual basis. The permit will also contain language requiring the facility to comply with the DEQ CO until such time that short term emissions are placed in a permit. After issuance of the Minor NSR, a SOP will be developed that will take effect upon physical completion of the stack merge project (approximately January 2008). The facility will then be required to operate in accordance with the SOP issued by DEQ containing short term and annual emission limits demonstrated to be protective of the NAAQS.

**Option 3 – DEQ Consent Order, Minor NSR Permit, and State Operating Permit effective upon completion of the MES**

The SAPCB may approve a Consent Order (CO) with Mirant in conjunction with issuing a Minor NSR permit under Chapter 80 Article 6 of The Regulations which authorizes the company to merge the stacks during the scheduled fall 2007 plant outage. As discussed above, the DEQ CO will contain similar provisions as the EPA ACO which will allow the facility to determine operations based on daily predictive modeling so that short term NAAQS exceedances are avoided. However, the DEQ CO also will include numerous provisions that will make it more stringent than the EPA ACO, and it will not shield Mirant from enforcement in the event the plant's emissions cause a monitored exceedance of the NAAQS while it is operating pursuant to an order from DOE or PJM. The DEQ CO will become effective upon the expiration of the EPA ACO on June 1, 2007, and expire upon issuance of a permit by DEQ that contains short term emission rates that demonstrate modeled NAAQS compliance. The Minor NSR permit will contain emission limits that have been demonstrated to be protective of the NAAQS on an annual basis. Upon completion of the MES, the facility will be required to operate in accordance with a n SOP issued by DEQ containing short term and annual emission limits demonstrated to be protective of the NAAQS.

DEQ currently intends to recommend Option 2 principally because it is most likely to result in a stack merge project this fall which will improve performance relative to public health; and it does not unduly restrict generating capacity based on a model that has been shown to be extremely conservative by the monitoring results of the last year.

DRAFT 3/16/07

**COMMONWEALTH OF VIRGINIA  
STATE AIR POLLUTION CONTROL BOARD**

**ORDER BY CONSENT**

**ISSUED TO**

**MIRANT POTOMAC RIVER, LLC  
Registration No. 70228**

**SECTION A: Purpose**

This is a Consent Order issued under the authority of Va. Code §§ 10.1-1307D and 10.1-1307.1, between the State Air Pollution Control Board and Mirant Potomac River, LLC for the purpose of ensuring compliance with ambient air quality standards incorporated at 9 VAC Chapter 30, 9 VAC 5-20-180I, and Va. Code § 10.1-1307.3(3) at the Potomac River Power Station located in Alexandria, Virginia.

**SECTION B: Definitions**

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

1. "Va. Code" means the Code of Virginia (1950), as amended.
2. "Board" means the State Air Pollution Control Board, a permanent collegial body of the Commonwealth of Virginia as described in Va. Code §§ 10.1-1301 and 10.1-1184.
3. "Department" or "DEQ" means the Department of Environmental Quality, an agency of the Commonwealth of Virginia as described in Va. Code § 10.1-1183.
4. "Director" means the Director of the Department of Environmental Quality.
5. "EPA" means the United States Environmental Protection Agency.
6. "The Order" or "this Order" means this document, also known as a Consent Order.
7. "ACO" means the Administrative Compliance Order by Consent issued by EPA to Mirant on June 1, 2006, resolving EPA's December 22, 2005, Notice to Mirant alleging that Mirant did not immediately undertake the necessary action to protect human health

and the environment in violation of 9 VAC 5-20-180I and the federally-enforceable Virginia State Implementation Plan.

8. "Order by Consent" means the consent order entered into between Mirant and the Department effective September 23, 2004, that required Mirant to perform a dispersion modeling analysis to assess the effect of Downwash (the "downwash study") of emissions from the Facility and further required Mirant devise with the Department and comply with a plan to eliminate any exceedances of the NAAQS.
9. "Mirant" means Mirant Potomac River, LLC, a limited liability company certified to do business in Virginia. Mirant Potomac River, LLC is owned by Mirant Mid-Atlantic, LLC.
10. "Facility" means the Potomac River Generating Station owned and operated by Mirant located at 1400 North Royal Street, Alexandria, Virginia, 22314. The Facility is a five unit, 488 MW coal-fired electric generating plant.
11. "The Permit" means the Stationary Source Permit to Operate issued by DEQ to the Facility on September 18, 2000, pursuant to 9 VAC 5-80-800, *et seq.*
12. "Marina Towers" means a multiple-unit residential condominium building located at 501 Slaters Lane, Alexandria, Virginia, in proximity to the Facility.
13. "Downwash" means the effect that occurs when aerodynamic turbulence induced by wind over nearby structures causes pollutants from an elevated source (such as a stack) to be mixed rapidly toward the ground resulting in higher ground-level concentrations of pollutants.
14. "NAAQS" means the primary National Ambient Air Quality Standards established by EPA for certain pollutants, including sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), ozone, and particulate matter 10 microns across (PM<sub>10</sub>), and particulate matter 2.5 microns across (PM<sub>2.5</sub>), pursuant to § 109 of the federal Clean Air Act, 42 USC § 7409, set forth at 40 CFR Part 50 and incorporated at 9 VAC Chapter 30. NAAQS are established at concentrations necessary to protect public health with an adequate margin of safety.
15. "State Air Toxic Pollutant Standards" means the requirements of Virginia's "Emission Standards for Toxic Pollutants From New and Modified Sources" set forth at Article 5, 9 VAC 5-60-300, *et seq.*
16. "NO<sub>x</sub>" means oxides of nitrogen, which are pollutants resulting from the combustion of fossil fuels and a precursor to the formation of ozone.
17. "PM<sub>10</sub>" means particulate matter with an aerodynamic diameter less than or equal to 10 micrometers and is a pollutant resulting from, among other things, the combustion of fossil fuels.

18. "PM2.5" means particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers and is a pollutant resulting from, among other things, the combustion of fossil fuels.
19. "HCl" means hydrogen chloride, which is a toxic pollutant under the State Air Toxic Pollutant Standards.
20. "HF" means hydrogen fluoride, which is a toxic pollutant under the State Air Toxic Pollutant Standards.
21. "Stack Merge Project" means the proposal by Mirant to reconfigure and merge the Facility stacks and exhaust system in a manner that would reduce Downwash in most cases and otherwise abate the impact of emissions on the area surrounding the Facility.
22. "AERMOD Default" means Version 04300 of the AERMOD computer model using BIP PRIME derived direction-specific dimensions, currently approved for general use by EPA.
23. "AERMOD EBD" means the most recent EPA-approved version of AERMOD computer model with modified direction-specific building dimensions derived from the Wind Tunnel Study.
24. "Wind Tunnel Study" means a study undertaken by Mirant pursuant to the ACO using a physical model, as outlined in CPP Wind's Wind Tunnel Model Evaluation protocol, dated January 17, 2006, which has been submitted to EPA for approval and conducted in accordance with EPA Guidance, to evaluate the accuracy of AERMOD Default's assumptions with respect to the direction-specific effective building dimensions when applied to the Facility.
25. "DOE" means the United States Department of Energy.
26. "DOE Order" means Order No. 202-05-3, issued by the Department of Energy on December 20, 2005 in Docket No. EO-05-01, in response to an Emergency Petition and Complaint filed by the District of Columbia Public Service Commission, as subsequently modified and extended by DOE.
27. "Line Outage Situation" means that one or more of the 230 kV transmission lines serving the Central D.C. area are out of service due to a planned or unplanned outage, and that PJM directs the Facility to operate pursuant to the DOE Order.
28. "Modeled NAAQS Exceedance" means a modeled 3-hour average sulfur dioxide concentration which, when a background concentration of 238.4 micrograms per cubic meter is added, exceeds 1,300 micrograms per cubic meter; or a modeled 24-hour average sulfur dioxide concentration which, when a background concentration of 51 micrograms per cubic meter is added, exceeds 365 micrograms per cubic meter; or a modeled 24 hour PM10 concentration which, when a background concentration of 45 micrograms per cubic meter is added, exceeds 150 micrograms per cubic meter.

29. "Model Evaluation Study" or "MES" means the study submitted by Mirant and approved by EPA pursuant to the ACO to compare multiple computer model predicted ambient air impacts to actual measured ambient air concentrations for the purpose of determining the best performing computer model in evaluating the effects of the emissions resulting from the operation of the Facility.
30. "Modified Model Evaluation Study" or "Modified MES" means a study to be submitted by Mirant pursuant to this Order and approved by the Department for the purpose of comparing multiple computer model predicted ambient air impacts to actual measured ambient air concentrations for the purpose of determining the best performing computer model in evaluating the effects of the emissions resulting from the operation of the Facility following completion of the Stack Merge Project.
31. "MES Protocol" means the protocol submitted by Mirant pursuant to ACO and approved by the EPA for the purpose of preparing the MES.
32. "Modified MES Protocol" means a protocol to be submitted by Mirant pursuant to this Order and approved by the Department for the purpose of preparing the Modified MES to account for operations of the Facility following completion of the Stack Merge Project.
33. "Monitoring Plan" means the plan submitted by Mirant pursuant to the ACO and approved by EPA as part of the MES for the installation and use of ambient air monitors in the vicinity of the Facility to monitor ambient air quality impacts of the Facility.
34. "Revised Monitoring Plan" means a plan to be submitted by Mirant pursuant to this Order and approved by the Department as part of the Revised MES for the purpose of determining proper location and use of ambient air monitors in the vicinity of the Facility to monitor ambient air quality impacts of the Facility following completion of the Stack Merge Project.
35. "Monitors" means the ambient SO<sub>2</sub> and PM<sub>2.5</sub> air monitors installed in accordance with the Monitoring Plan or Revised Monitoring Plan.
36. "Non-Line Outage Situation" means all periods of time that do not qualify as a Line Outage Situation.
37. "Operating Parameters" means the hourly average MW load of each unit for each hour of that day at the Facility, and the hourly average SO<sub>2</sub> emission rate expressed in lb/MMBtu for each unit for each hour of that day.
38. "Operating Plan" means the December 30, 2005, Operating Plan submitted to DOE by Mirant to respond to the requirement for a compliance plan under the DOE Order.
39. "Predictive Modeling" means the daily use of an approved AERMOD computer model with forecasted weather conditions and planned Operating Parameters for the following day to predict modeled SO<sub>2</sub> and PM<sub>10</sub> NAAQS compliance and compliance with applicable State Air Toxic Pollutant Standards on a day-ahead basis.

40. "PJM" means the regional transmission organization for the region where the Facility is located which has authority to direct operations at the Facility during Line Outage Situations pursuant to the DOE Order.

#### **SECTION C: Findings of Fact and Conclusions of Law**

1. In April 2004, certain residents of Alexandria, Virginia, provided the Department with a document entitled "Screening-Level Modeling Analysis of the Potomac River Power Plant Located in Alexandria, Virginia" prepared by Sullivan Environmental Consulting, Inc., dated March 29, 2004 ("the Sullivan Screening"). The Sullivan Screening was commissioned by, among others, certain residents of Marina Towers for the purpose of assessing whether emissions from the Facility may cause exceedances of certain NAAQS at Marina Towers as a result of "downwash." The Sullivan Screening concluded that, "on average, meteorological conditions associated with plume impaction conditions on the Marina Towers condominium were screened to occur as often as 1,200 hours per year."
2. Although the Sullivan Screening did not establish conclusively that emissions from the Facility result in exceedances of the NAAQS at Marina Towers, the Department believed the results of the Sullivan Screening warranted that further comprehensive analysis be conducted in accordance with the Department and EPA approved modeling procedures in order to more fully ascertain the effect of emissions from the Facility on the ambient air quality at Marina Towers and in the area in the immediate vicinity of the Facility.
3. Pursuant to the Order by Consent entered into by Mirant and the Department effective September 23, 2004, Mirant performed a dispersion modeling analysis using AERMOD Default to assess the effect of Downwash (the "downwash study") of emissions from the Facility. The downwash study used computer modeling to predict ambient concentrations of pollutants emitted by the Facility under certain weather and atmospheric conditions.
4. Mirant provided the results of the downwash study to the Department on August 17, 2005. By letter dated August 19, 2005, the Department informed Mirant that the downwash study demonstrated that emissions from the Facility resulted in, caused or substantially contributed to, modeled violations of the primary NAAQS for SO<sub>2</sub>, NO<sub>2</sub>, and PM<sub>10</sub> under certain atmospheric conditions.
5. The Department's August 19<sup>th</sup> letter also requested Mirant to immediately undertake "such action as is necessary to ensure protection of human health and the environment, in the area surrounding the Potomac River Generating Station" pursuant to 9 VAC 5-20-180I.
6. In response to the Department's August 19<sup>th</sup> letter Mirant shut down all five units of the Facility at midnight on August 24, 2005.
7. On August 24, 2005, the District of Columbia Public Service Commission ("DCPSC") filed an "Emergency Petition and Complaint" with the DOE and the Federal Energy Regulatory Commission ("FERC"), respectively, pursuant to the Federal Power Act

("FPA"), 16 U.S.C. § 824a(c), 824f and 825h, and Section 301(b) of the DOE Organization Act, 42 U.S.C. § 7151(b). The Emergency Petition and Complaint requested that DOE find that an emergency existed under Section 202(c) of the FPA and issue an order requiring Mirant to continue operation of the Facility.

8. Following additional AERMOD Default modeling and assessment of the downwash study, Mirant re-started Unit 1 of the Facility on September 21, 2005. Additional modeling conducted by Mirant indicated that operation of only Unit 1 would not cause any modeled NAAQS exceedances.
9. On December 20, 2005, the Secretary of Energy issued the DOE Order finding that an emergency existed and ordering Mirant to operate in a manner that would not cause an exceedance of the NAAQS during Non-Line Outage Situations and to "utilize pollution control equipment and measures to the maximum extent possible to minimize the magnitude and duration of any exceedance of the NAAQS" during Line Outage Situations. The DOE Order, among other things, required Mirant to submit a plan to DOE detailing the steps to be taken to ensure Mirant's compliance with the DOE Order. The DOE Order, modified as discussed below and extended by DOE, remains in effect as of the effective date of this Order.
10. On December 30, 2005, Mirant submitted to DOE an Operating Plan proposing two options for operating under Non-Line Outage Situations: According to Mirant, Option A provided for less electric reliability but would not result in exceedances of the NAAQS; Option B on the other hand provided for greater electric reliability but would have resulted in exceedances of the NAAQS in certain Non-Line Outage Situations (Option A called for fewer operating hours and lower emissions than Option B).
11. By letter dated January 4, 2006, DOE required that Mirant "immediately" implement Option A of the proposed Operating Plan.
12. In accordance with DOE's directive to maximize electric generation while not causing or contributing to a NAAQS violation, Mirant supplemented Option A of the Operating Plan with additional operating configurations and modeling. The supplements to Option A called for the use of Trona injection and a blend of low sulfur coal to manage SO<sub>2</sub> emissions. According to Mirant, the supplemental operating scenarios would result in no modeled NAAQS exceedances.
13. By letter dated December 22, 2005, EPA issued a Notice to Mirant alleging that Mirant did not immediately undertake the necessary action to protect human health and the environment required by the Department's August 19, 2005 letter, and that Mirant was therefore in violation of 9 VAC 5-20-180I and the federally-enforceable Virginia State Implementation Plan ("SIP") for the period of time in which it failed to immediately shut down all the Facility units.
14. On June 1, 2006, EPA issued to Mirant the Administrative Compliance Order by Consent ("ACO"). The ACO gave Mirant the option of conducting an MES for the purpose of determining the best performing computer model in evaluating the effects of emissions

from the Facility on the surrounding area. Mirant elected to conduct an MES pursuant to the terms of the ACO.

15. The ACO required Mirant, while conducting the MES, to operate on a daily basis at levels no greater than those that would assure that emissions of SO<sub>2</sub> and PM<sub>10</sub> from the Facility did not result in localized modeled exceedances of the NAAQS pursuant to Predictive Modeling during Non-Line Outage Situations.
16. The ACO further required Mirant to install at the Facility a system to inject Trona into each unit while it is operating to reduce emissions of SO<sub>2</sub>.
17. The ACO further required Mirant to install and continuously operate six SO<sub>2</sub> monitors in the vicinity of the Facility at locations generally near points of highest modeled predicted pollutant impact. The ACO required Mirant to quickly reduce operations if monitored SO<sub>2</sub> readings reached 80% of the NAAQS.
18. Notwithstanding the provisions discussed above, the ACO required Mirant to operate pursuant to directives from the regional electric grid operator, PJM, during Line-Outage Situations, while taking all reasonable steps to limit emissions of PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub>.
19. By letter dated June 2, 2006, DOE instructed Mirant to operate the Facility in accordance with the requirements of Part IV of the ACO during Non-Line Outage Situations. In that letter, DOE determined that operation of the Facility under Option A pursuant to its January 4, 2006, letter did not provide an adequate level of electric reliability to the District of Columbia and that operation under Part IV of the ACO, in particular under the Model Evaluation Study, was necessary to assure an acceptable level of reliability under the circumstances.
20. At no time have the Facility's operations under Predictive Modeling pursuant to the terms of the ACO under Non-Line Outage Situations resulted in a monitored exceedance of the SO<sub>2</sub> NAAQS or in monitored concentrations of SO<sub>2</sub> approaching 80% of the NAAQS during Non-Line Outage situations.
21. During the course of the ACO, the Department, EPA, and Mirant and have continued to work to devise a long-term solution to ensure that emissions from the Facility do not harm public health or the environment as directed by the September 23, 2004, Order by Consent and in accordance with Virginia and federal law.
22. Towards this end, the Board has commenced a process to develop and issue Mirant a permit containing emission limits to assure that operation of the Facility does not result in exceedances of the NAAQS or applicable State Air Toxic Pollutant Standards.
23. An essential tool in developing the Board's permit is a model that predicts the impact of the Facility's emissions on the surrounding area as accurately as possible. The unique physical characteristics and placement of buildings adjacent to the Facility, as well as the discrepancies between modeled impacts and monitoring data thus far collected in the course of the MES indicate that the accuracy of AERMOD Default may be improved by the Modified MES.

24. Moreover, Mirant has expressed its intention to reconfigure and merge the Facility's stacks and exhaust system and has provided preliminary information to the Department that indicates that the project would reduce Downwash and otherwise abate the impact of emissions on the area surrounding the Facility ("the Stack Merge Project").
25. The Department believes based on available information that the Facility's operation under Predictive Modeling pursuant to the MES and ACO during Non-Line Outage Situations has adequately assured compliance with the NAAQS on an interim basis pending issuance of a permit with NAAQS-protective emission limits.
26. The ACO expires by its terms on June 1, 2007. Pursuant to 9 VAC 5-20-180I, this Order is intended to extend the Facility's operation under Predictive Modeling on an interim basis until a permit is issued to Mirant with emission limits protective of the NAAQS and the applicable State Air Toxic Pollutant Standards for HCl or HF. This Order shall require the installation and operation of 10 total SO<sub>2</sub> monitors - four more than required by the ACO - as well as the installation and operation of three PM<sub>2.5</sub> monitors in the vicinity of the Facility. Operation of such monitors may be outsourced to an independent contractor acceptable to the DEQ at Mirant's expense.

#### **SECTION D: Agreement and Order**

Accordingly, the Board, by virtue of the authority granted it in Va. Code §§ 10.1-1307D and 10.1-1307.1 orders Mirant, and Mirant agrees, to perform the actions described in this section of the Order:

##### **Use of Trona**

1. Mirant shall maintain and operate a Trona injection system on all five units at the Facility. Mirant shall inject Trona into the exhaust gas of each unit while it is operating for the purpose of complying with this Order.

##### **Model Evaluation Study**

2. From June 2, 2007, until completion of the Stack Merge Project, Mirant shall continue the MES commenced pursuant to the terms of the ACO, and the protocol as approved by EPA under the ACO except as modified by this Order.

##### **Operations in Accordance with Daily Predictive Modeling**

3. From June 2, 2007, Mirant shall operate the Facility in a manner that does not cause or significantly contribute to Modeled NAAQS Exceedances by using Predictive Modeling described as follows: By 10 AM each morning, Mirant shall collect actual weather predictions from the National Weather Service for the Reagan National Airport and use them along with planned Operating Parameters as inputs to conduct a computer modeling run for the following day using AERMOD EBD (or AERMOD Default until such time as EPA approves the Wind Tunnel Study in the event EPA has not approved the Wind Tunnel Study by June 2, 2007). If the modeling predicts that Mirant's planned operations for the following day will not result in a Modeled NAAQS Exceedance for SO<sub>2</sub> or PM<sub>10</sub>,

or the applicable State Air Toxic Pollutant Standards for HCl or HF, Mirant may operate on the day modeled in accordance with the modeled Operating Parameters. If the Predictive Modeling indicates that the planned Operating Parameters will result in one or more Modeled NAAQS Exceedances for SO<sub>2</sub> or PM<sub>10</sub>, or the applicable State Air Toxic Pollutant Standards for HCl or HF, Mirant shall not run under those operating parameters but shall continue to adjust its planned operations and conduct additional modeling runs using the adjusted Operating Parameters to confirm that the adjusted operations will not cause or significantly contribute to a modeled exceedance of a PM<sub>10</sub> or SO<sub>2</sub> NAAQS or the applicable State Air Toxic Pollutant Standards for HCl or HF for the day modeled.

4. If the Predictive Modeling indicates that the predicted weather conditions and planned Operating Parameters do not result in a Modeled NAAQS Exceedance for SO<sub>2</sub> or PM<sub>10</sub>, or an exceedance of applicable State Air Toxic Standards for HCl or HF, Mirant is authorized to operate using the planned Operating Parameters and shall not be in violation of this Order; or 9 VAC 5-20-180I, as incorporated into the Virginia SIP at 40 C.F.R. 52.2420(c), or the applicable State Air Toxic Pollutant Standards for HCl or HF; nor shall such operation be deemed to give a right for a cause of action for any alleged violation of the NAAQS as a result of Mirant's causing or contributing to any modeled exceedance of the NAAQS. This release shall apply only to alleged exceedances or violations occurring during the lifetime of this Order and shall apply only to laws in existence on the effective date of this Order.
5. From the effective date of this Order until completion of the Stack Merge Project, Mirant shall continue to operate the six SO<sub>2</sub> monitors approved by EPA under the Monitoring Plan pursuant to the terms of the ACO.
6. Within 30 days of the effective date of this Order, Mirant shall submit to the Department a detailed description of how it conducts daily Predictive Modeling under the MES and MES Protocol, including a description of the National Weather Service weather predictions used by Mirant. Mirant also shall submit within 30 days of the effective date of this Order to the Department for its approval: 1) a description of how it conducts daily Predictive Modeling and follow-up modeling for HCl and HF; and 2) an explanation of the background air quality numbers used for the daily Predictive Modeling and follow-up modeling for SO<sub>2</sub>, PM<sub>10</sub>, HCl and HF.

#### **PM10 Predictive Modeling**

7. From June 2, 2007, whenever Mirant operates four or more units, it shall abide by an emission rate of 0.055 lb/MMBtu for PM<sub>10</sub> for each unit and shall conduct Predictive Modeling using this rate to determine whether operation of the units causes or contributes to a Modeled NAAQS Exceedance. If the Predictive Modeling indicates that the planned Operating Parameters will result in a Modeled NAAQS Exceedance for PM<sub>10</sub>, Mirant shall adjust its planned operating scenarios and re-run the Predictive Modeling with an emission rate of 0.055 lb/MMBtu until such time as Mirant confirms through predictive Modeling that the adjusted operations will not cause or significantly contribute to a Modeled NAAQS Exceedance for PM<sub>10</sub>.

#### Operation During Periods of Elevated Monitored SO<sub>2</sub> Impacts

8. From June 2, 2007, Mirant shall maintain and operate a monitor alert system in the Facility's Control Room that registers an audible alarm if in any one hour the average measured ambient concentration of SO<sub>2</sub> at any Monitor is equal to or greater than 80% of the 3 hour SO<sub>2</sub> NAAQS, measured as 400 parts per billion (1,040 µg/m<sup>3</sup>).
  - a. During the hour following the sounding of the alarm, Mirant shall make operational adjustments, which may include increasing Trona injection and/or decreasing operation and shall observe the effect of these adjustments on the average, measured ambient concentration of SO<sub>2</sub>.
  - b. If, at the end of the second hour, the average measured ambient concentration of SO<sub>2</sub> is not equal to or less than 1,040 µg/m<sup>3</sup>, Mirant shall adjust its operations to conform to the scenarios described in Appendix 1 to this Order until the rolling 3 hour average is less than 1,040 µg/m<sup>3</sup>.
9. Mirant shall also configure the audible alarm to sound if, in any 12 hour period, any Monitor measures an average, ambient concentration of SO<sub>2</sub> equal to or greater than 80% of the 24 hour SO<sub>2</sub> NAAQS, measured as 112 parts per billion (292 µg/m<sup>3</sup>).
  - a. During the following 6 hours, Mirant shall make operational adjustments, which may include increasing Trona injection and/or decreasing operation and shall observe the effect of these adjustments on the measured ambient concentration of SO<sub>2</sub>.
  - b. If, at the end of the 6 hour period, the average, measured ambient concentration of SO<sub>2</sub> is not equal to or less than 292 µg/m<sup>3</sup>, Mirant shall adjust its operations to conform to the scenarios described in Appendix 1 for the balance of the calendar day.
10. Mirant shall also configure the audible alarm to sound if, after the first 6 months of operation from June 2, 2007, any Monitor measures an average, ambient concentration of SO<sub>2</sub> equal to or greater than 80% of the annual average NAAQS, measured as 64 µg/m<sup>3</sup>.
  - a. During the following 3 months, Mirant shall monitor the 7 month, 8 month and 9 month averages.
  - b. If, at the end of 9 months after June 2, 2007, the average, measured ambient concentration of SO<sub>2</sub> is not equal to or less than 64 µg/m<sup>3</sup>, Mirant shall adjust its operations so that the annual, measured ambient concentration of SO<sub>2</sub> does not exceed 80 µg/m<sup>3</sup>.
  - c. If the audible alarm sounds more than 5 times in a calendar month, Mirant shall, on a one-time basis, adjust the alarm to 75% of the applicable NAAQS.

#### Modified Model Evaluation Study (MES)

11. Within 30 days of the effective date of this Order, Mirant shall submit to the Department for approval a Revised MES Protocol for modifying the MES, using the most recently EPA-approved version of AERMOD EBD available as of that date (or AERMOD Default until such time as EPA approves the Wind Tunnel Study in the event EPA has not approved the Wind Tunnel Study by June 2, 2007), to account for operations of the Facility following completion of the Stack Merge Project. Mirant shall send a copy of the Revised MES Protocol to EPA simultaneously with submitting it to the Department.

The Revised MES Protocol shall contain a Revised Monitoring Plan that calls for the installation and operation of no less than 10 (four additional) SO<sub>2</sub> Monitors and three PM<sub>2.5</sub> Monitors. The Revised Monitoring Plan shall require:

- a. Two of the SO<sub>2</sub> Monitors and one of the PM<sub>2.5</sub> Monitors to be located at Marina Towers.
  - b. Until completion of the Stack Merge Project, the remaining Monitors to be located and operated generally in the vicinity of the Facility at points of highest pollutant impact as predicted by AERMOD EBD based on the modeling of emissions from the Facility as configured prior to completion of the Stack Merge Project.
  - c. Following completion of the Stack Merge Project, all of the Monitors (except for those located at Marina Towers) to be located generally in the vicinity of the Facility at points of highest pollutant impact as predicted by AERMOD EBD based on modeling of emissions resulting from the Stack Merge Project.
  - d. A detailed discussion of how the monitoring sites were selected. The ability of Mirant and the Department to obtain permission to install a monitor at a particular location shall be factor in site selection.
  - e. The collection of one year of monitoring data following completion of the Stack Merge Project prior to completion of the Modified MES.
12. Mirant shall have all 13 monitors located, installed, and operating by July 15, 2007.
  13. Upon completion of the Stack Merge Project Mirant shall commence the Modified MES as approved by the Department.
  14. It shall be the responsibility of Mirant to ensure that the monitors are operated, maintained, and subject to the appropriate QA/QC provisions set forth at Appendix A to 40 C.F.R. Part 58.

#### **Follow-Up Modeling**

15. From the effective date of this Order Mirant shall perform "follow-up," also known as "hindcast," computer modeling using actual weather conditions and Operating Parameters, and shall report the results to the Department and EPA on a weekly basis, as described below. This "follow-up" modeling will be performed on the Monday following the previous week of operation. If at any time the "follow-up" modeling demonstrates a modeled exceedance of the NAAQS or the applicable State Air Toxic Pollutant Standards, or the Monitors demonstrate an actual exceedance of the NAAQS, or the applicable State Air Toxic Pollutant Standards, Mirant shall report such modeled or monitored exceedance to the Department and EPA within 3 days of the modeled or monitored exceedance, or as immediately as practicable upon receiving the results of follow up modeling or monitoring showing the modeled or monitored exceedance, for a determination by the Department as to whether corrective action is required.

### Evaluation of Modified MES

16. At the conclusion of the Modified MES, the performance of the applicable models will be evaluated in accordance with the document "Protocol for Determining the Best Performing Model." EPA-454/R-92-025, Sept. 1992, Comparing Computer Model-Predicted Air Concentrations to Actual Ambient Air Concentrations Measured by the Monitors. The information yielded by the comparison of model predictions to measured ambient concentrations will result in a determination by the Department and EPA as to which model is best-performing. Thereafter, the best-performing model shall be used to conduct computer modeling to develop the NAAQS-protective emission limits to be contained in the permit the Board will issue to the Facility.

### Reporting

17. Commencing June 2, 2007, Mirant shall deliver to the Department and EPA bi-weekly: (1) the modeled input files and results of the daily Predictive Modeling for the preceding month, including the hourly average heat input in MMBtu for each unit and the exit velocity (or exhaust volume) for each unit; (2) verification that the planned Operating Parameters utilized for Predictive Modeling in the preceding month were not exceeded, or if exceeded, documentation describing that exceedance; (3) the inputs and results of "follow-up" modeling for the preceding month (or portion thereof during which all Monitors were not in place), including the hourly average heat input in MMBtu for each unit and the exit velocity (or exhaust volume) for each unit; (4) the data generated by the Monitors; and (5) the meteorological data used for each day of Predictive Modeling and each day of follow-up modeling. All such reports shall be publicly available and Mirant waives any claims it might have that such reports contain confidential business information.

### Operation During Line Outage Situations

18. From the effective date of this Order, during a Line Outage Situation, Mirant shall operate the Facility to produce the amount of power needed to meet the load demand in the Washington, D.C. area, as specified by PJM and in accordance with the DOE Order. During such operations, Mirant shall utilize pollution control equipment and measures to the maximum extent possible under the circumstances to limit the emissions of PM10, PM2.5, NOx, and SO2 from each boiler, including operating only the higher of the number of units necessary to meet PJM's directive pursuant to the DOE Order or the number that satisfy the predictive modeling, and optimizing its use of Trona injection to minimize SO2 emissions. Mirant, at a minimum, shall operate the facility in accordance with best air pollution control practices as identified in Appendix 2 to this Order. During a Line Outage Situation, Mirant shall achieve 0.80 lb/mmBtu SO2 emissions on a rolling 24 hour average basis.
  - a. If Mirant has 30 days notice in advance of a Line Outage Situation, it shall submit a plan based on the criteria above to the Department for approval 15 days before commencement of the Line Outage describing how Mirant intended to limit emissions during the Line Outage Situation. In the event that Mirant

demonstrates in the plan that an emissions level of 0.80 lb/mmBtu is not logistically feasible because of factors such as the quantity of available Trona and predicted duration of the outage, the plan shall describe how Mirant otherwise intended to optimize its use of Trona injection so as to maximize SO<sub>2</sub> reduction and it shall propose control measures and removal efficiencies to be achieved during the Line Outage Situation.

- b. If Mirant has fewer than 30 days advance notice of the Line Outage Situation, Mirant shall submit the plan referred to in the subsection above to the Department for approval as promptly as reasonably possible under the circumstances but not later than five days from the notification date. The plan to be followed for an unscheduled Line Outage Situation will depend upon the specific circumstances at the time of the unscheduled Line Outage Situation.
19. Non-avoidable malfunctions of emission control devices, such as Trona injection, shall not be deemed a failure to limit the emissions during a Line Outage Situation, provided that Mirant has made all reasonable efforts under the circumstances to avoid the malfunction and to promptly correct the malfunction. All emissions during a Line Outage Situation count toward any other permit, statutory, or regulatory limits for the Facility. If operation of the Facility during a Non-Line Outage or Line Outage Situation causes or contributes to a monitored exceedance of the NAAQS or the applicable State Air Toxic Pollution Standards, this Order shall not prevent the Department from issuing an appropriate order or otherwise taking appropriate action under DEQ regulations.
  20. During Line Outage Situations, Predictive Modeling must continue to be performed but the Facility shall be operated under the Line Outage Situation provision in accordance with the DOE Order and this Order.

#### **Annual NO<sub>x</sub> Emission Limit and PM<sub>10</sub> Emission Rate Limit**

21. The Facility shall not emit more than 3700 tons of NO<sub>x</sub> per year.
22. The Facility shall not emit more than 1600 tons of NO<sub>x</sub> from between May 1 through September 30 (the Ozone Season) of that same year.
23. The Facility shall limit the emission rate of PM<sub>10</sub> for each unit to 0.055 lbs/MMBtu.

#### **Additional Particulate Matter and Fugitive Dust Control**

24. As of the effective date of this Order, Mirant shall have implemented and be operating the particulate matter and fugitive control measures identified in Appendix 3 of this Order.

#### **General Provisions**

25. Mirant's actions shall be consistent with all provisions of federal and state law, including but not limited to, the Clean Air Act, all federal regulations promulgated under the Clean Air Act, and any other applicable laws, including the Virginia SIP.

26. Mirant shall cooperate with the Department in the development of permit emission limits protective of all NAAQS or applicable State Air Toxic Pollutant Standards. Mirant agrees to submit and provide to the Department on a timely basis all information requested by the Department for the development and issuance of any air permit.
27. Mirant agrees that the obligations of this Order, to the extent they have not been completed, may become obligations in an air permit issued to Mirant.
28. To the extent consistent with this Order, the terms of the September 23, 2004, Order by Consent between the Department and Mirant are incorporated herein by reference. Notwithstanding any requirements of this Order, Mirant remains obligated under the terms of the Order by Consent to eliminate and prevent any NAAQS exceedances caused by the Facility.

#### **Section E: Administrative Provisions**

1. This Order shall apply to and be binding upon Mirant, its agents, successors, and assigns and upon all persons, contractors and consultants acting under or for Mirant, or persons acting in concert with Mirant who have actual knowledge of this Order or any combination thereof with respect to matters addressed in this Order. No change in ownership or corporate or partnership status will in any way alter Mirant's responsibilities under this Order.
2. The Board may modify, rewrite, or amend this Order with the consent of Mirant for good cause shown by Mirant, or after a proceeding as required by the Administrative Process Act for a case decision.
3. This Order addresses only those issues specifically identified herein. This Order shall not preclude the Board or the Director from taking any action authorized by law, including, but not limited to taking subsequent action to enforce the terms of this Order. This order shall not preclude appropriate enforcement actions by other federal, state or local regulatory agencies for matters not addressed herein.
4. Solely for the purposes of the execution of this Order, for compliance with this Order, and for subsequent actions with respect to this Order, Mirant consents to the jurisdictional allegations, but neither admits nor denies the findings of fact, and conclusions of law contained herein.
5. Mirant declares it has received fair and due process under the Administrative Process Act, Va. Code §§ 2.2-4000 *et seq.*, and the Air Pollution Control Law and it waives the right to any hearing or other administrative proceeding authorized or required by law or regulation, and to any judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial review of, any action taken by the Board to modify, rewrite, amend, or enforce this Order, or any subsequent deliverables required to be submitted by Mirant and approved by the Department, without the consent of Mirant.

6. Subject to the Force Majeure provisions in Section E.8, failure by Mirant to comply with any of the terms of this Order 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 or Director as a result of such violations.
7. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.
8. Mirant shall be responsible for failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or other such circumstance. Mirant must show that such circumstances resulting in noncompliance were beyond its control and not due to a lack of good faith or diligence on its part. Mirant shall notify the Department in writing when circumstances are anticipated to occur, are occurring, or have occurred that may delay compliance or cause noncompliance with any requirement of this Order. Such notice shall set forth:
  - a. The reasons for the delay or noncompliance.
  - b. The projected duration of any such delay or noncompliance.
  - c. The measures taken and to be taken to prevent or minimize such delay or noncompliance.
  - d. The timetable by which such measures will be implemented and the date full compliance will be achieved.
9. Failure to so notify the Department in writing within 24 hours of learning of any condition above, which Mirant intends to assert will result in the impossibility of compliance, shall constitute a waiver of any claim of inability to comply with a requirement of this Order.
10. All notifications, plans, reports, or other information Mirant is required to submit to the Department pursuant to this Order shall be sent to:

Director, Northern Regional Office  
Virginia Department of Environmental Quality  
13901 Crown Court  
Woodbridge, VA 22193
11. This Order shall become effective upon execution by both the Director of the Department of Environmental Quality or his designee and Mirant.
12. This Order shall continue in effect until:
  - a. The effective date of a permit issued to the Facility which contains limits that assure that emissions from the Facility do not result in modeled exceedances

of the NAAQS or the applicable State Air Toxic Pollutant Standards for all pollutants.

- b. Mirant petitions the Director or his designee to terminate the order after it has completed all of the requirements of the Order and the Director or his designee approves the termination of the Order.
  - c. The Director or Board terminates the Order in his or its sole discretion upon 30 days written notice to Mirant.
13. Termination of this Order, or of any obligation imposed in this Order, shall not operate to relieve Mirant from its obligation to comply with any statute, regulation, permit condition, other order, certificate, certification, standard, or requirement otherwise applicable.

AND IT IS ORDERED this \_\_\_\_ day of \_\_\_\_\_, 2007.

By: \_\_\_\_\_  
David K. Paylor, Director  
Department of Environmental Quality

Mirant Potomac River, LLC, voluntarily agrees to the issuance of this Order.

Mirant by: \_\_\_\_\_

The foregoing instrument was signed and acknowledged before me on this \_\_\_\_ day of \_\_\_\_\_ 2007 by \_\_\_\_\_ of Mirant Potomac River, LLC, in the City of \_\_\_\_\_, Commonwealth of Virginia.

\_\_\_\_\_  
Notary Public

My Commission expires: \_\_\_\_\_

**Appendix 1**

Note: Mirant may request, subject to Department approval, additional complying scenarios to be added to the table at a later date.

**Summary of Complying lb SO<sub>2</sub>/MMBtu Rates**

Scenario	Units On	Operating Hours	lb SO <sub>2</sub> /MMBtu Complying Rate using EBDs	
			3-hr	24-hr
1a	3 & 4	Both Units @ 16 hrs max/ 8 hrs min	0.46	0.44
1b	3 & 4	Both Units @ 12 hrs max/ 12 hrs min	0.46	0.42
2a	3 & 5	Both Units @ 16 hrs max/ 8 hrs min	0.51	0.47
2b	3 & 5	Both units @ 12 hrs max/ 12 hrs min	0.49	0.45
3a	4 & 5	Both Units @ 16 hrs max/ 8 hrs min	0.50	0.45
3b	4 & 5	Both units @ 12 hrs max/ 12 hrs min	0.45	0.43
4a	1,2,3	Units 1,2 @ 8 hrs max/ 8 hrs min/ 8 hrs off; Unit 3 @ 16 hrs max/ 8 hrs min	0.37	0.40
4b	1,2,3	Units 1,2 @ 8 hrs max/ 8 hrs min/ 8 hrs off; Unit 3 @ 12 hrs max/ 12 hrs min	0.37	0.40
5a	1,2,4	Units 1,2 @ 8 hrs max/ 8 hrs min/ 8 hrs off; Unit 4 @ 16 hrs max/ 8 hrs min	0.40	0.40
5b	1,2,4	Units 1,2 @ 8 hrs max/ 8 hrs min/ 8 hrs off; Unit 4 @ 12 hrs max/ 12 hrs min	0.40	0.40
6a	1,2,5	Units 1,2 @ 8 hrs max/ 8 hrs min/ 8 hrs off; Unit 5 @ 16 hrs max/ 8 hrs min	0.46	0.43
6b	1,2,5	Units 1,2 @ 8 hrs max/ 8 hrs min/ 8 hrs off; Unit 5 @ 12 hrs max/ 12 hrs min	0.46	0.43
7a	3,4,5	All units @ 16 hrs max/ 8 hrs min	0.33	0.30
7b	3,4,5	All units @ 12 hrs max/ 12 hrs min	0.32	0.29
7c	3,4,5	All units @ 8 hrs max/ 16 hrs min	0.30	0.26

Assumes Background Concentrations

3hr: 238.4 g/m<sup>3</sup>

24hr: 51 g/m<sup>3</sup>

## Appendix 2

The following procedures will be implemented during Line Outage Situations to ensure the ability to reduce SO<sub>2</sub> emissions is optimized:

1. Maintain trona injection on each unit at the maximum flow possible – up to the limitations of the system: b lower discharge pressure, feeder speed, etc.
2. Station additional operators on the hot precipitator ash systems to quickly resolve ash pluggage problems and manually ensure ash is flowing properly.
3. Schedule extra ash trucks to be on site during line outages to handle the expected increase in ash generated.
4. Schedule the ash storage site to extend its hours, allowing additional truck deliveries from Potomac River plant to be received.
5. Shift load from units with higher SO<sub>2</sub> to units with lower SO<sub>2</sub>, to the extent possible, to reduce overall SO<sub>2</sub> emissions.
6. When unit loads ramp to follow demand, bring units with lowest SO<sub>2</sub> up first and down last to minimize overall SO<sub>2</sub> emissions.

### Appendix 3

#### **Fugitive Dust Control Projects**

Note: Projects that make use of water sprays to control fugitive dust will not be operated during periods when daytime temperatures are below 32 degrees Fahrenheit, consistent with good operating practice, to avoid icing conditions that would be hazardous to employees and equipment.

##### **1. Bottom Ash and Fly Ash Silo Vent Reducting**

Ash from the Potomac River Plant's operations is transported pneumatically from the five units to three ash silos. Once in the silos, ash drops out and the transport air is vented out the top of the silos, through baghouse dust collectors. In this Project, Mirant shall install ductwork from the outlet of each ash silo vent and combine them into one duct. The new ductwork will be routed to the inlet of Unit #1 hot precipitator. Mirant estimates that this Project may reduce fugitive dust emissions at the Potomac River Plant by as many as 30 tons per year.

##### **2. Coal Pile Wind Erosion and Dust Suppression**

Mirant shall install a 12' high perimeter fence with windscreens on the windward and leeward sides of the coal storage pile to reduce wind erosion. The fencing shall be installed on top of existing concrete walls, which form the boundary of the coal pile. The fencing shall also be engineered to handle area wind loads, and be designed to avoid the effects of eddying and dust carryover. Mirant estimates that this Project may reduce fugitive dust emissions at the Potomac River Plant by as many as 2.8 tons per year.

##### **3. Coal Stackout Conveyor Dust Suppression**

Coal delivered to the Potomac River Plant is either transported from a railcar unloader to the plant via a series of conveyor belts, or conveyed to a storage pile outside the plant. Currently, a set of nozzles spray water at the end of the conveyor that drops coal onto the storage pile to suppress fugitive dust emissions. Once this Project is implemented, Mirant shall spray a chemical binding agent onto coal as it drops onto the belt. The binding agent shall be a non-hazardous chemical that agglomerates fine coal particles together prior to being dropped onto the pile, thereby preventing wind from causing the fine particles to escape. The binding agent shall remain effective for a month or more on the coal in the pile, even with rain or when coal is moved around the pile. Mirant estimates that this Project may reduce fugitive dust emissions at the Potomac River Plant by as many as 800 pounds per year.

#### 4. Ash Loader Upgrade

Ash is transferred from storage silos to trucks by a gravity-feed system, in which ash-loading equipment regulates the flow of ash out of the silo above, then mixes it with water prior to dropping the dampened ash into a truck below. Fugitive ash dust emissions at this location are correlated to the extent to which the loader mixes water into the flowing ash. There are three ash silos, two of which have had modern ash loader equipment installed (in 1997 and 2001), and one that has the original equipment. Mirant shall replace the ash loading equipment on the third silo with the modern design which is much more effective at mixing water into the ash, further reducing fugitive dust emissions associated with this process. Mirant estimates that this Project may reduce fugitive dust emissions at the Potomac River Plant by as many as 200 pounds per year.

#### 5. Ash Loading System Dust Suppression

In addition to the Ash Loader Upgrade Project described above, Mirant shall install a water fogging system at the transfer points between the ash loaders and trucks, for additional dust suppression. Mirant shall also install a system of water pumps, piping, nozzles, and a control system to form a "fog" around the ash loader discharge chute. The water droplets shall drop fugitive ash particles to the ground, drain into a collection sump, and be treated at the Plant's water treatment facility. Mirant estimates that this Project may reduce fugitive dust emissions at the Potomac River Plant by as many as 200 pounds per year.

#### 6. Coal Railcar Unloading Dust Suppression

The railcar unloader is a device that empties individual railcars filled with coal onto conveyor belts, prior to the conveyance of the coal to the plant, by tipping the railcar upside down. To supplement the existing dust controls at this location, Mirant shall spray a dilute mixture of water and binding agent onto the coal at three locations during the unloading process. The three spray levels shall be activated in sequence as each railcar is tipped over. Mirant estimates that this Project may reduce fugitive dust emissions at the Potomac River Plant by as many as 200 pounds per year.

#### 7. Truck Washing Facility

A truck washing facility shall be installed at the Potomac River Plant to wash the wheels, under-carriage, and sides of trucks used to haul fly ash and bottom ash to off-site ash storage facilities. The facility shall consist of a steel basin with ramps on either end, and an array of nozzles that spray high velocity jets of water on the bottom and sides of trucks as they are driven through the device. Water shall be recirculated through a filtration tank. Two pumps shall move water through the system, one to supply water to the spray nozzles, and one to draw water out of the basin and through the filtration tank.

Accumulated solids in the filtration tank shall be removed periodically, transported off site, and disposed of in accordance with all applicable local, state, and federal laws and regulations. Mirant estimates that this Project may reduce fugitive dust emissions at the Potomac River Plant by as many as 13.7 tons per year.



## COMMONWEALTH of VIRGINIA

### DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

Fax (804) 698-4500 TDD (804) 698-4021

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L. Preston Bryant, Jr.  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

March 16, 2007

### MEMORANDUM

TO: State Air Pollution Control Board Members

Please find attached the **DRAFT** permit and engineering analysis for the Potomac River Generating Station in Alexandria, VA. Any changes to information within the permit will be made after the Air Board Meeting on March 26, 2007. The format of the permit would be the same for either a minor NSR permit or a State Operating Permit (SOP). The engineering analysis is consistent with an engineering analysis that would be found in a minor NSR permit. The engineering analysis for a SOP would contain essentially the same information, but would not contain the discussion on NSR applicability. Emission limits will be established based on the type of permit the Board directs the staff to prepare and the results of the dispersion modeling which has not been completed. Additionally, three sections are not included in the engineering analysis 1) Fugitive Emissions; 2) Dispersion Modeling; and 3) Compliance Demonstration. These sections will be sent next week.

**STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE**

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

Mirant Corporation  
8711 Westphalia Road  
Upper Marlboro, MD 20774  
Registration No.: 70228

is authorized to modify and operate

an electricity generating facility

located at

1400 North Royal Street  
Alexandria, VA 22314

in accordance with the Conditions of this permit.

Approved on DRAFT.

Director, Department of Environmental Quality

Permit consists of 14 pages.  
Permit Conditions 1 to 42.

**INTRODUCTION**

This permit approval is based on the permit application dated February 26, 2007. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action. In addition, this facility may be subject to additional applicable requirements not listed in this permit.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-20 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

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 9 VAC 5-170-60 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.

**PROCESS REQUIREMENTS**

1. **Equipment List** - Equipment at this facility consists of the following:

<b>Equipment to be modified</b>			
<b>Reference No.</b>	<b>Equipment Description</b>	<b>Maximum Rated Capacity</b>	<b>Manufactured Date</b>
C1	Combustion Engineering, natural circulation, tangentially coal-fired with superheater and economizer with low Nox burners.	970.1 mmBtu/hr	1949
C2	Combustion Engineering, natural circulation, tangentially coal-fired with superheater and economizer with low NOx burners.	970.1 mmBtu/hr	1950
C3	Combustion Engineering, natural circulation, tangentially coal-fired with superheater and economizer with low NOx burners and over fired air.	960.7 mmBtu/hr	1954
C4	Combustion Engineering, natural circulation, tangentially coal-fired with superheater and economizer with low NOx burners and over fired air.	960.7 mmBtu/hr	1956
C5	Combustion Engineering, natural circulation, tangentially coal-fired with superheater and economizer with low NOx burners and over fired air.	960.7 mmBtu/hr	1957
Ash Silos	Two (2) fly ash silos and one (1) bottom ash silo	480 tons per day	n/a

Ash Loader	Fly ash and bottom ash truck loading from silos and ash truck roadway dust	880 tons per day	n/a
Coal Handling	Coal pile wind erosion, coal stackout conveyor system, coal railcar dumper	711,836 tons per year	n/a
Trona Handling	Pneumatic upload system, full enclosure	n/a	n/a

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit.

(9 VAC 80-1180 D 3)

2. **Stack Merge** – The stack exhausts from boilers C1 and C2 shall be merged into the boiler C2 stack to create a common exhaust stack which shall be identified as ‘Stack 1’. The stack exhausts from boilers C3, C4, and C5 shall be merged into the boiler C4 stack to create a common exhaust stack which shall be identified as ‘Stack 2’. The existing stacks from boilers C1, C3, and C5 shall remain in place but shall cease to operate. Resumption of operation of the existing stacks from boilers C1, C3, and C5 may require a permit.  
 (9 VAC 5-80-1180)
3. **NO<sub>x</sub> Emission Controls** - NO<sub>x</sub> emissions from boilers C1 and C2 shall be controlled by the use of low NO<sub>x</sub> burners.  
 (9 VAC 5-80-1180)
4. **NO<sub>x</sub> Emission Controls** - NO<sub>x</sub> emissions from boilers C3, C4, and C5 shall be controlled by the use of low NO<sub>x</sub> burners and separated over fired air.  
 (9 VAC 5-80-1180)
5. **SO<sub>2</sub> Emission Controls** – SO<sub>2</sub> emissions from boilers C1, C2, C3, C4, and C5 shall be controlled by the use of low sulfur coal and trona injection.  
 (9 VAC 5-80-1180)
6. **PM Emission Controls** – Particulate emissions from boilers C1, C2, C3, C4, and C5 shall each be controlled by hot side electrostatic precipitators followed in series by cold side electrostatic precipitators designated as EP1, EP2, EP3, EP4, and EP5, respectively. The electrostatic precipitators shall be provided with adequate access for inspection and shall be in operation when each boiler is operating.  
 (9 VAC 5-80-1180)
7. **PM Emission Controls** – Particulate emissions from the two (2) fly ash silos shall be controlled by baghouse fabric filters and by routing the baghouse fabric filter exhaust to the boiler C1 hot side electrostatic precipitator. The baghouse fabric filters shall be provided with adequate access for inspection and shall be in operation when the fly ash silos are operating (filling and unloading).  
 (9 VAC 5-80-1180)
8. **PM Emission Controls** – Particulate emissions from the bottom ash silo shall be controlled by a baghouse fabric filter. The baghouse fabric filter shall be provided with adequate access for

inspection and shall be in operation when the bottom ash silo is operating (during filling and unloading).

(9 VAC 5-80-1180)

9. **PM Emission Controls** – Particulate emissions from fly ash and bottom ash loading from the ash silos to trucks shall be controlled by partial enclosure.  
(9 VAC 5-80-1180)
10. **PM Emission Controls** – Particulate emissions from coal pile wind erosion shall be controlled by the installation of a wind screen. Particulate emissions from the coal stack-out conveyor system shall be controlled by the use of an enclosed conveyor and the installation of a telescopic chute. Particulate emissions from coal railcar dumping shall be controlled by partial enclosure with heavy duty curtains and by the use of a water fogging spray header. All controls shall be in operation whenever active coal pile activities are in operation.  
(9 VAC 5-80-1180)
11. **PM Emission Controls** – Particulate emissions from trona handling shall be controlled by use of a pneumatic unloading system and total enclosure.  
(9 VAC 5-80-1180)
12. **Electrostatic Precipitator Control Efficiency** - The electrostatic precipitators (EP1, EP2, EP3, EP4, and EP5) achieve control efficiency for PM of no less than 99.9 percent, to be demonstrated by stack test and calculated **monthly** or alternative standard, as approved by DEQ. The permittee shall develop power curves for each of the electrostatic precipitators demonstrating the required control efficiency for all electrostatic precipitator field power loads. The power curves for each electrostatic precipitator shall be maintained on-site and available for inspection for the life of the permit.  
(9 VAC 5-80-1180)
13. **Fugitive Dust and Fugitive Emission Controls** – Fugitive emission controls shall include the following, or equivalent, as approved by DEQ:
  - a. Use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, grading of roads, or clearing of land.
  - b. Application of asphalt, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; paving of roadways, and maintenance of roadways in a clean condition.
  - c. Open equipment for conveying or transporting materials likely to create objectionable air pollution when airborne shall be covered, or treated in an equally effective manner at all times when in motion.
  - d. Prompt removal of spilled or tracked dirt or other materials from paved streets and of dried sediments resulting from soil erosion.
  - e. Reasonable precautions shall be taken to prevent deposition of dirt on public roads and subsequent dust emissions. Trucks leaving the site shall have clean wheels achieved by use of a wheel washer or equivalent.  
(9 VAC 5-50-90 and 9 VAC 5- 80-1180)

14. **Monitoring** - Continuous opacity monitors (COMS) shall be installed to measure and record the opacity of emissions from Stacks 1 and 2. The monitors shall be maintained and calibrated in accordance with 9 VAC 5-40-41 of State Regulations.  
(9 VAC 5-80-1180 D and 9 VAC 5-40-40)
15. **Monitoring** - Continuous emission monitors (CEMs) shall be installed to measure and record the emissions of SO<sub>2</sub>, NO<sub>x</sub>, and PM-2.5 from boilers C1, C2, C3, C4, and C5. The CEMs shall be maintained, located, calibrated, and quality assured/controlled according to approved procedures in accordance with the provisions of 40 CFR Part 75. The permittee shall utilize monthly recorded CEMs data to calculate annual SO<sub>2</sub>, NO<sub>x</sub>, and PM-2.5 emissions (in tons per year) monthly as the sum of each consecutive 12-month period. Calculations shall be maintained on-site for the most recent 5-year period and shall demonstrate compliance with the emission limitations set forth in Conditions 24 through 29.  
(9 VAC 5-80-1180 D)
16. **Monitoring** – The permittee shall calculate emissions of PM, PM-10, CO, and VOC in tons per year from boilers C1, C2, C3, C4, and C5. The permittee shall calculate annual emissions (in tons per year) monthly as the sum of each consecutive 12-month period utilizing monthly boiler heat input data or monthly fuel throughput, control equipment efficiency, and appropriate F-factors or AP-42 emission factors in order to demonstrate compliance with the emission limitations set forth in Conditions 24 through 29. Calculated emissions shall take into account any emissions associated with startup and shutdown of the boilers. Startup and shutdown emissions shall be identified as such in any emissions calculations.  
(9 VAC 5-80-1180 D)
17. **Monitoring Devices** - Each fabric filter baghouse shall be equipped with a device to continuously measure and record pressure drop across the filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times. Each monitoring 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 monitoring device shall be provided with adequate access for inspection and shall be in operation when the silos are operating.  
(9 VAC 5-80-1180 D)
18. **Monitoring Devices** – A condition assessment shall be conducted on the electrostatic precipitators annually by the permittee in order to ensure the equipment is in proper operating condition. The permittee shall maintain a record of each assessment on-site for the most recent 5-year period. Records shall include the date and the time of the assessment, and any findings or corrective actions taken.  
(9 VAC 5-80-1180 D)
19. **Monitoring Device Observation** – To ensure good performance, each monitoring device used to continuously measure pressure drop across the fabric filters shall be observed by the permittee with a frequency of not less than once per day. The permittee shall keep a log of the observations, or continuously record measurements from the monitoring device. The observation log or any

continuously recorded measurements shall be maintained on-site for the most recent 5-year period and shall be made available for inspection. At least once per week, an observation of the presence of visible emissions from each fabric filter shall be made. If visible emissions are observed, the permittee shall take timely corrective action such that the units resume operation with no visible emissions, or perform a visible emission evaluation (VEE) in accordance with 40 CFR 60, Appendix A, Method 9, to assure visible emissions from the fabric filters do not exceed 20 percent (20%) opacity. The VEE shall be conducted for a minimum of 6 (six) minutes. If any of the observations exceed 20 percent opacity, the VEE shall be conducted for a total of 60 (sixty) minutes. If compliance is not demonstrated by this VEE, timely corrective action shall be taken such that the fabric filters resume operation with visible emissions of 20 percent or less. The permittee shall maintain an observation log on-site for the most recent 5-year period to demonstrate compliance. The log shall include the date and the time of the observations, whether or not there were any visible emissions, any VEE recordings, and any necessary corrective action.  
(9 VAC 5-80-1180 D)

### OPERATING LIMITATIONS

20. **Fuel** - The approved fuels for boilers C1, C2, C3, C4 and C5 are coal and distillate oil. A change in the fuel may require a permit to modify and operate.  
(9 VAC 5-80-1180)

21. **Fuel** - The coal and distillate oil shall meet the specifications below:

**COAL:**

Maximum heat content: 12,800 Btu/lb HHV  
as determined by ASTM D2015, D3286, or a DEQ-approved equivalent method.

Maximum sulfur content per shipment: 0.9 %  
as determined by STM D3177, D4239, or a DEQ-approved equivalent method

Maximum ash content per shipment: 11.0%  
as determined by ASTM D3174, or a DEQ-approved equivalent method.

**DISTILLATE OIL** which meets the ASTM D396 specification for numbers 1 or 2 fuel oil:  
Maximum sulfur content per shipment: 0.8%

(9 VAC 5-80-1180)

22. **Fuel Certification** - The permittee shall obtain a certification from the fuel supplier with each shipment of coal and distillate oil. Each fuel supplier certification shall include the following:

- a. The name of the fuel supplier;
- b. The date on which the coal or distillate oil was received;

- c. The quantity of coal or distillate oil delivered in the shipment;
- d. A statement that the distillate oil complies with the American Society for Testing and Materials specifications (ASTM D396) for numbers 2 fuel oil;
- e. The sulfur content of the coal or distillate oil;
- f. Documentation of sampling of the coal or distillate oil indicating the location of the fuel when the sample was taken; and;
- g. The methods used to determine the sulfur and ash contents of the coal;

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 22. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.  
 (9 VAC 5-80-1180)

**EMISSION LIMITS** – The following emissions limits become effective upon completion of the stack merge project

23. **Process Emission Limits** - Emissions from the operation of the boiler C1 shall not exceed the limits specified below:

	<b>Annual (baseline)</b>
Particulate Matter (PM) including condensable PM	tpy
PM-10 including condensable PM-10	tpy
PM-2.5 including condensable PM-2.5	tpy
Sulfur Dioxides	tpy
Oxides of Nitrogen (as NO <sub>2</sub> )	tpy
Carbon Monoxide	tpy
Volatile Organic Compounds	tpy

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 15 and 16.  
 (9 VAC 5-80-1180)

24. **Process Emission Limits** - Emissions from the operation of the boiler C2 shall not exceed the limits specified below:

	<b>Annual (baseline)</b>
Particulate Matter (PM) including condensable PM	tpy
PM-10 including condensable PM-10	tpy
PM-2.5 including condensable PM-2.5	tpy
Sulfur Dioxides	tpy
Oxides of Nitrogen (as NO <sub>2</sub> )	tpy
Carbon Monoxide	tpy
Volatile Organic Compounds	tpy

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 15 and 16.  
 (9 VAC 5-80-1180)

**25. Process Emission Limits** - Emissions from the operation of the boiler C3 shall not exceed the limits specified below:

	<b>Annual (baseline)</b>
Particulate Matter (PM) including condensable PM	tpy
PM-10 including condensable PM-10	tpy
Sulfur Dioxides	tpy
PM-2.5 including condensable PM-2.5	tpy
Oxides of Nitrogen (as NO <sub>2</sub> )	tpy
Carbon Monoxide	tpy
Volatile Organic Compounds	tpy

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 15 and 16.  
 (9 VAC 5-80-1180)

**26. Process Emission Limits** - Emissions from the operation of the boiler C4 shall not exceed the limits specified below:

	<b>Annual (baseline)</b>

Particulate Matter (PM) including condensable PM	tpy
PM-10 including condensable PM-10	tpy
PM-2.5 including condensable PM-2.5	tpy
Sulfur Dioxides	tpy
Oxides of Nitrogen (as NO <sub>2</sub> )	tpy
Carbon Monoxide	tpy
Volatile Organic Compounds	tpy

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 15 and 16.  
 (9 VAC 5-80-1180)

27. **Process Emission Limits** - Emissions from the operation of the boiler C5 shall not exceed the limits specified below:

	<u>Annual (baseline)</u>
Particulate Matter (PM) including condensable PM	tpy
PM-10 including condensable PM-10	tpy
PM-2.5 including condensable PM-2.5	tpy
Sulfur Dioxides	tpy
Oxides of Nitrogen (as NO <sub>2</sub> )	tpy
Carbon Monoxide	tpy
Volatile Organic Compounds	tpy

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 15 and 16.  
 (9 VAC 5-80-1180)

28. **Facility wide Emission Limits** - Total emissions from the electric generating facility shall not exceed the limits specified below:

	<u>Annual</u>
Particulate Matter (PM) including condensable PM	tpy

PM-10 including condensable PM-10	tpy
PM-2.5 including condensable PM-2.5	tpy
Sulfur Dioxides	tpy
Oxides of Nitrogen (as NO <sub>2</sub> )	tpy
Carbon Monoxide	tpy
Volatile Organic Compounds	tpy

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 3 through 16, 20 through 23, and 31.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)

29. **Visible Emission Limit** - Visible emissions from the boilers C1, C2, C3, C4, and C5 shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-80)

30. **Visible Emission Limit** - Visible emissions from coal and ash handling shall not exceed 20 percent opacity at all times as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).  
 (9 VAC 5-80-1180 and 9 VAC 5-50-80)

**RECORDS**

31. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Northern Virginia Region Office. These records shall include, but are not limited to:

- a. Annual consumption of fuel oil and coal, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
- b. Control efficiency and power curve data for the electrostatic precipitators using a calculation method approved by the Northern Virginia Regional Office.
- c. All fuel supplier certifications.

- d. Monthly emissions calculations and CEMs data for SO<sub>2</sub>, NO<sub>x</sub>, PM, PM-10, PM-2.5, CO, and VOC from the boilers using calculation methods approved by the Northern Virginia Regional Office to verify compliance with the ton/yr emissions limitations in Conditions 24 through 29.
- e. CEMs and COMs maintenance and calibration records.
- f. Any required visible emissions evaluations (VEEs) and visible emission evaluation logbook data.
- g. Operation and control device monitoring records for the electrostatic precipitators and fabric filters as required in Conditions 18 and 19.
- h. Scheduled and unscheduled maintenance, and operator training.

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

(9 VAC 5-80-1180 and 9 VAC 5-50-50)

32. **Emissions Testing** - The stack merge project shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. This includes constructing the facility/equipment such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing a stack or duct that is free from cyclonic flow. Sampling ports shall be provided when requested and safe sampling platforms and access shall be provided.

(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

### NOTIFICATIONS

33. **Initial Notifications** - The permittee shall furnish written notification to the Northern Virginia Regional Office of:
- a. The actual date on which modification of the electric generating facility commenced within 30 days after such date.
  - b. The anticipated start-up date of the electric generating facility after the stack merge postmarked not more than 60 days nor less than 30 days prior to such date.
  - c. The actual start-up date of the electric generating facility after the stack merge within 15 days after such date.
  - d. The anticipated date of continuous monitoring system performance evaluations postmarked not less than 30 days prior to such date.
  - e. The intention to use continuous opacity monitoring system data results to demonstrate compliance with the applicable visible emission limit during a performance test in lieu of

Reference Method 9 (reference 40 CFR Part 60, Appendix A), postmarked not less than 30 days prior to the date of the performance test.

- f. The anticipated date of performance tests of the electric generating facility postmarked at least 30 days prior to such date.

(9 VAC 5-50-50 and 9 VAC 5-80-1180)

### **GENERAL CONDITIONS**

34. **Permit Invalidation** – This permit to modify boilers (C1, C2, C3, C4, and C5) shall become invalid, unless an extension is granted by the DEQ, if:

- a. A program of continuous construction, reconstruction, or modification is not commenced within the latest of the following:
- i. 18 months from the date of this permit;
  - ii. Nine months from the date that the last permit or other authorization was issued from any other governmental entity;
  - iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or
- b. A program of construction, reconstruction, or modification is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

(9 VAC 5-80-1210)

35. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the conditions of this permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit, ;
- d. Causes emissions from the stationary source which result in violations of , or interfere with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

36. **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.  
(9 VAC 5-170-130 and 9 VAC 5-80-1180)

37. **Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, soot blowing, 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 boilers C1, C2, C3, C4 and C5 and electrostatic precipitators EP1, EP2, EP3, EP4, and EP5:

- 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.  
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

Units 1 and 2 are cycling units that offer more flexibility in how they are dispatched. Cycling units can be brought online quickly to respond to increases in demand. Units 3, 4 and 5 are considered baseload units and are called into service more often than Units 1 and 2. The baseload units typically run 24 hours a day

The facility is a Title V major source of sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM<sub>10</sub>), and carbon monoxide (CO). This facility is located in a nonattainment area for ozone (“moderate” designation) and nonattainment area for PM<sub>2.5</sub> (no designation assigned by EPA at this time). The area is in attainment of the standards for all other pollutants. The VDEQ-Northern Virginia Region Office is currently drafting the Title V permit and Statement of Basis for the facility.

Because the units are grandfathered, there are no NSR permits applicable to this source. The facility entered in to a consent order with VDEQ on July 10, 1998 to establish Reasonable Available Control Technology (RACT) for NO<sub>x</sub> as required by the Virginia State Implementation Plan (Attachment 1). A state operating permit dated June 5, 2000 (Attachment 2) was issued to the facility to establish RACT for VOC. The facility is also regulated under a Phase II Acid Rain Permit dated February 28, 2003 (Attachment 3) and a state operating permit dated September 29, 2000 (Attachment 4) for control of NO<sub>x</sub> during the ozone control season, May 1<sup>st</sup> through September 30<sup>th</sup>.

### III. Recent Events

In 2003 Mirant allegedly exceeded the emission limit for NO<sub>x</sub> in the NO<sub>x</sub> SIP Call operating permit. The alleged violations resulted in a judicial consent decree (EPA 2004) in September 2004 and an amended judicial consent decree in May 2006 (EPA 2006g). Part of the 2004 settlement required Mirant to cap NO<sub>x</sub> emissions from its Mid-Atlantic network of facilities including Chalk Point Generating Plant, in Prince George's County, Maryland; Dickerson Generating Plant, in Montgomery County, Maryland; Morgantown Generating Plant, in Charles County, Maryland; and PRGS. To achieve the reductions and meet the system-wide NO<sub>x</sub> caps, Mirant was required to install NO<sub>x</sub> pollution control equipment at PRGS. As a result Mirant installed Low NO<sub>x</sub> Burners on all boilers (C1, C2, C3, C4, and C5) and Separated Over Fire Air (SOFA) technology on unit C3, 4, and C5 at the PRGS.

Also as part of the 2004 settlement Mirant was required to perform a modeling analysis to predict the effect of “downwash” from PRGS on ambient concentrations of several NAAQS pollutants. The study showed significant modeled exceedances of three NAAQS pollutants from downwash: sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and particulate matter finer than 10 µm in aerodynamic diameter (PM<sub>10</sub>). As a result of the study, on August 19, 2005, the (VDEQ) issued a letter to Mirant requesting that Mirant “undertake such action as is necessary to ensure protection of human health and the environment, in the area surrounding the Potomac River Generating Station, including the potential reduction of levels of operation, or potential shutdown of the facility.” On August 24, 2005, in response to VDEQ's August 19, 2005, letter, Mirant decided to shut down all five generating units at PRGS.

Following the plant shutdown on August 24, 2005, the District of Columbia Public Service Commission (DCPSC) filed an Emergency Petition and Complaint with the Department of Energy (DOE) requesting that the Secretary of Energy find that an emergency existed under Section 202(c) of the Federal Power Act and to issue an order directing Mirant to continue operation of PRGS. DCPSC claimed that shutdown of PRGS created a reliability of electric supply emergency to the Central D.C. area.

The DOE investigated whether an emergency existed and met with EPA to understand the environmental situation posed by PRGS's operation with regard to the NAAQS. During the DOE investigation, Mirant restarted the unit 1 in an 8-8-8 capacity (that is, in any given 24-hour period, the unit ran for 8 hours at its maximum level, 8 hours at its minimum level, and did not run for 8 hours) at PRGS on September 21, 2005. Mirant also began experimenting with measures to control SO<sub>2</sub>, specifically combustion of low-sulfur coal and injection of trona (a substance similar to baking soda consisting of calcium bicarbonate) into flue gases.

On December 20, 2005, after investigating the situation, the DOE issued an order finding that an emergency existed in the Central D.C. area due to the reasonable possibility of a power outage. The Order required Mirant to operate PRGS to produce enough power to meet demand in the Central D.C. area during a planned or unplanned outage of other area transmission lines. The facility was also instructed to keep as many generating units in operation (and take all other measures as necessary to reduce the start-up time of the units not in operation) for the purpose of providing electricity reliability, without causing an exceedance of the NAAQS. In addition, the Order required Mirant to utilize pollution control equipment and measures to the maximum extent possible to minimize the magnitude and duration of any exceedance of the NAAQS during a planned or unplanned transmission line outage.

On June 1, 2006, EPA issued an Administrative Compliance Order (ACO) to Mirant, under which Mirant is still operating. The ACO directs Mirant to operate PRGS under conditions specified in the DOE Order during line outage situations, but requires Mirant to take all reasonable steps to limit SO<sub>2</sub>, PM<sub>10</sub>, and NO<sub>x</sub> emissions and to optimize use of trona to minimize SO<sub>2</sub> emissions. In non-line outage situations (i.e., in the normal course of operation), the ACO authorizes Mirant to operate the facility under "daily predictive modeling." Under daily predictive modeling Mirant is able to model a specific operating parameters for the facility based on predicted weather conditions for the following day and operate under that mode only where the daily modeling run demonstrates that the facility will not cause or contribute to a modeled exceedance of the 3-hr and 24-hr SO<sub>2</sub> and PM<sub>10</sub> NAAQS. Mirant must follow up with additional modeling following the day of operation using the observed metrological conditions for that day.

The ACO also requires Mirant to maintain alarms that alert operators if monitored average concentrations reach 80% of the standards for SO<sub>2</sub>, including the annual SO<sub>2</sub> standard. The ACO also requires Mirant to install and operate six new SO<sub>2</sub> ambient monitoring stations in the vicinity where elevated pollutant concentrations have been predicted and to conduct actual monitoring of ambient SO<sub>2</sub> concentrations.

#### IV. Pollution Controls

Each boiler (C1, C2, C3, C4, and C5) has a hot-side and a cold-side electrostatic precipitator (ESP), on its boiler exhaust gas stream to control particulate emissions.

Mirant installed Low NO<sub>x</sub> Burners (LNB) on all units (C1, C2, C3, C4, and C5) and Separated Over Fire Air (SOFA) technology on units C3, C4, and C5 as a result of a 2004 judicial consent decree settlement.

LNB limit the formation of NO<sub>x</sub> by controlling the stoichiometric and temperature profiles of the combustion process in each burner zone. Emissions are controlled by the design of the LNB which may reduce oxygen levels in the combustion zone (limits fuel NO<sub>x</sub> formation), reduce flame temperature (limits thermal NO<sub>x</sub> formation), and/or reduce residence time at peak temperature (limits thermal NO<sub>x</sub> formation).

The SOFA is a technique that involves removing a percentage of combustion air and adding excess air above the burners. This limits thermal NO<sub>x</sub> by partially delaying and extending the combustion process resulting in less intense combustion, and lower flame temperatures. It also suppresses the fuel NO<sub>x</sub> formation by reducing the concentration of air in the combustion zone where volatile fuel nitrogen is evolved. The SOFA can reduce NO<sub>x</sub> by 20 to 30 percent from uncontrolled levels, and can be turned off.

Beginning in 2005 Mirant employed the use of Trona to reduce SO<sub>2</sub> emissions that demonstrated modeled NAAQS exceedences. Trona is a naturally occurring mineral, sodium sesquicarbonate, which is non-hazardous and non-flammable and similar to baking soda. It is used in dry sorbent injection systems where it reacts with acid gases to form a safe non-corrosive product that will not damage the equipment. When injected into the exhaust gas stream the dry powder forms bonds with SO<sub>2</sub>. The compounded material is then removed from the exhaust gas by existing emissions control equipment and collected with the ash. Test results at PRGS indicate that trona injection could consistently remove a significant portion of the SO<sub>2</sub> from exhaust gas while reducing particulate emissions. Particulate matter can form in the atmosphere when emitted gases, such as sulfur dioxide, condense; so when the amount of sulfur dioxide decreases, the amount of particulate matter is reduced accordingly.

#### V. Project Description

Mirant is proposing to merge the existing 5 units' stacks into 2 existing stacks to improve downwash conditions predicted to occur under certain weather conditions. Combining 2 or 3 or the exhaust streams will result in increased gas volumes and associated higher exit velocities which Mirant hopes will create a higher rise of all gases and emissions into the atmosphere and thus lessening the potential downwash impacts.

The stack merge project consists of several components. The exhaust from the two cycling units (units C1 and C2) will be merged to exit from what is currently the stack for unit C1. The exhausts from the three base load units (C3, C4, and C5) will be merged and will exit from what is currently the stack for unit C4. Units were grouped together based on similar load profiles. The stacks for units C2, C3, and C5 which will no longer be used will remain in place. Stacks for units C1 and C4 will require some maintenance in order to complete the stack merge. New common ductwork will be installed

connecting the individual unit exhaust fan discharges. All of the ductwork will be installed inside the existing plant structure and will not be visible from the ground.

Currently there are 2 exhaust fans per unit. All of the exhaust fans will be replaced with large capacity fans and motors capable of operating with the other units' fans in combination to directing the individual units' exhaust gases through the new common ductwork into the common stack. Existing power and control cables will also be replaced in order to accommodate the larger fans and motors.

## **VI. Regulatory Review**

### **A. 9 VAC 5 Chapter 80, Article 8 and 9 - PSD and Nonattainment Major New Source Review**

The facility is exempt from PSD and Nonattainment major new source review permitting requirements in 9 VAC 5 Chapter 80, Article 8 and 9 of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution (the Regulations). Major NSR Permit applicability for existing major sources is based on if the project causes a significant emissions increase and significant net emissions increase for any regulated air pollutant. The major source significance threshold are listed in the definition of "significant" in 9 VAC 5-80-1615 C and 9 VAC 5-80-2010 C. First, a significant emissions increase of a regulated NSR pollutant is calculated based on the sum of the difference between the projected actual emissions and the baseline actual emissions (past actual to future actual test), for each existing emissions unit. Baseline actual emissions for electric generating units for purposes of Major NSR applicability is the actual emissions during any two-year period within 5 years immediately preceding the modification. If the project does not result in a significant emissions increase, the project is not subject to Major NSR permitting. If the project does result in a significant emission increase, the net emissions increase is calculated to determine if the net emission increase resulting from the project is greater than the significant threshold levels. Mirant has requested the use of actual emissions data from the 2002-2003 period. Mirant has proposed to accept annual emission limits equal to past actual emissions; therefore the stack merge project does not result in a significant emissions increase greater than the PSD and Nonattainment major new source significant levels for any of the regulated pollutant and is not a major modification. The emission increase calculations to determine Major NSR applicability are in Attachment 5A and the future actual emission information is provided in Attachment 5B.

### **B. 9 VAC 5 Chapter 80, Article 6 - Minor New Source Review**

The stack merge project is applicable to the Minor New Source Review (NSR) Permit Program in 9 VAC 5 Chapter 80, Article 6 of the Regulations. Permit applicability is based on the modification to a stationary source that results in a net emission increase greater than the permit exemption levels list in Article 6, 9 VAC 5-80-1320 D.

*Modification is defined as "any physical change in, change in the method of operation, or addition to, a stationary source that would result in a net emissions increase of any regulated air pollutant..."* The stack merge is a physical change to the stationary source.

In order to be considered a modification, the physical change must result in a net emissions increase (NEI). As defined in Chapter 80, Article 6:

*"Net emissions increase" means the amount by which the sum of the following exceeds zero: (i) any increase in actual emissions from a particular physical change or change in the method of operation at a stationary source; and (ii) any other increases and decreases in actual emissions at the source that are concurrent with the particular change and are otherwise creditable. An increase or decrease in actual emissions is concurrent with the increase from the particular change only if it is directly resultant from the particular change. An increase or decrease in actual emissions is not creditable if the board has relied on it in issuing a permit for the source under the new source review program and that permit is in effect when the increase in actual emissions from the particular change occurs. Creditable increases and decreases shall be federally enforceable or enforceable as a practical matter.*

NEI is calculated as the sum of the difference between the future potential emissions and the average of the previous two years actual annual emissions rate for each emission unit also referred to as Past Actual (PA) emissions. As defined in Chapter 80, Article 6:

*"Actual emissions" means the actual rate of emissions (expressed in tons per year) of a pollutant from a stationary source or portion thereof, as determined in accordance with the provisions of this definition.*

- 1. In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two year period that precedes the particular date and that is representative of normal source operation. The board will allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.*
- 2. The board may presume that source-specific allowable emissions for the emissions unit are equivalent to the actual emissions of the unit.*
- 3. For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.*

PA emissions information was submitted by Mirant for years 2000 through 2005 and corresponds with the pollutant emissions calculations in the Comprehensive Environmental Database System (CEDs). Actual annual emissions data for 2006 was not available at the time the application was submitted. Actual annual emission data is provided in Attachment 6. In most circumstances, the past actual emissions would be based on the average annual emissions from 2004 and 2005. However, during 2004 and 2005 Mirant did not operate the PRGS in a manner that is reflective of normal operations. The regulations allow a different two year period other than the preceding

two year period to be used if that time period is more representative of normal source operation.

In 2005, the facility shutdown for over one month and later limited its operations in response to the August 19, 2005 letter from DEQ requesting that Mirant “undertake such action as is necessary to ensure protection of human health and the environment, in the area surrounding the Potomac River Generating Station, including the potential reduction of levels of operation, or potential shutdown of the facility.” Since emissions from the plant for 2005 were greatly reduced due to the shutdown and limited operation, 2005 emissions data is not representative of normal plant operations.

Emissions data from 2004 is not representative of normal operations because the plant curtailed generation that summer to meet ozone season NO<sub>x</sub> tonnage caps required by the NO<sub>x</sub> SIP Call permit and Consent Decree. The facility installed low NO<sub>x</sub> burners in the fall of 2004 and SOFA in the spring of 2005 and no longer had to curtail operations to meet the limit.

The first available two-year period of actual annual emissions that are representative of the source’s normal operations is 2002-2003 and has been determined to be the PA emissions for the facility. The PA emissions are adjusted lowered based on any control equipment installed by the company. Also, PA emissions are adjusted so not to allow the company to receive credit for any pollutants emitted in excess of permit limits. The 2002-2003 NO<sub>x</sub> PA emissions were lowered to account for the installation of LNB and SOFA as previously discussed. The baseline PA emissions are provided in Attachment 7A and the control efficiency of the LNB and SOFA are calculated in Attachment 7B.

Table 2 below provides the NEI calculated for the stack merge project. Future potential emission calculations are provided in Attachment 9. All pollutants except for NO<sub>x</sub> and Pb exceeds the modification threshold levels in 9 VAC 5-80-1320 D of the Minor NSR regulation; therefore the stack merge project is subject to a Minor NSR permit. As previously mentioned, annual emissions of NO<sub>x</sub> is limited to 3700 tons from the NO<sub>x</sub> Consent Decree so the future potential emissions of NO<sub>x</sub> is less than the PA emissions and does not result in a net emissions increase.

**Table 2: Minor NSR Permitting Applicability for the Stack Merge Project**

Pollutant	NEI Emissions (tons/yr)	Exemption Thresholds (tons/year) <sup>a</sup>	Subject to Permitting?
PM	2714.7	15	YES
PM-10	1637.5	10	YES
PM 2.5	946.6	10	YES
SO <sub>2</sub>	81650.8	10	YES
NO <sub>x</sub>	0	10	NO
CO	203.6	100	YES
VOC	19.3	10	YES
Pb	0	0.6	NO

<sup>a</sup> Taken from 9 VAC 5-80-1320 D for Modified Sources

**C. FUGITIVE EMISSIONS**

Currently under evaluation. To be distributed next week.

**D. Best Available Control Technology Review (BACT) Applicability (9 VAC 5-50-260)**

A BACT applicability evaluation is required because the changes at the facility are subject to Minor NSR permitting. The NEI calculations of criteria pollutants used to determine BACT applicability for the proposed project are calculated in Attachment 10.

The NEI for BACT applicability is calculated as the sum of future actual (FA) emissions minus the sum of past actual (PA) emissions calculated for permit applicability. FA emissions for Boilers C1, C2, C3, C4, and C5 are based on the emissions caps proposed by Mirant limiting the FA emissions to PA levels.

Under 9 VAC 5-50-260 B, a modified source shall apply best available control technology for each change with a NEI greater than the levels in 9 VAC 5-80-1320 D.1. for each regulated pollutant at the source. As shown in Table 3 below, the NEI for each pollutant is below their respective exemption rate in 9 VAC 5-80-1320 D.1 for modified sources. Therefore, BACT does not apply to the proposed project and no additional controls are necessary.

**Table 3: BACT Applicability for the Proposed Project**

Pollutant	NEI Emissions (tons/yr)	Exemption Thresholds (tons/year) <sup>a</sup>	Subject to BACT?
PM	0	15	NO
PM-10	0	10	NO
SO <sub>2</sub>	0	10	NO
NO <sub>x</sub>	0	10	NO
CO	0	100	NO
VOC	0	10	NO
Pb	0	0.6	NO

<sup>a</sup> Taken from 9 VAC 5-80-1320 D for Modified Sources.

**E. 9 VAC 5 Chapter 50, Part II, Article 5 – NSPS**

The PRGS is not subject to 40 CFR 60 Subpart D – Fossil Fuel Steam Generators or Da – Electric Utility Steam Generating Units. Both NSPS apply to fossil fuel fired steam generators that are greater than 250 mmbtu/hr and commenced construction or modification after August 17, 1971 for Subpart D and September 18, 1978 for Subpart Da. All five boilers at the PRGS were constructed between 1949 and 1957 and have not previously been subject to either NSPS. Modification is defined in the NSPS regulations as physical or operational changes that result in an increase in hourly rates of emissions. The stack merge project does not qualify as a modification as defined in the NSPS

because there is no increase in hourly emission rates that result from the stack merge project.

The PRGS is not subject to 40 CFR Subpart Db because the all boilers are larger than the 100-250 mmbtu/hr heat input capacity for applicability.

F. 9 VAC 5 Chapter 60, Part II, Article 1 – NESHAPS

There is no applicable NESHAP for steam generating units.

G. 9 VAC 5 Chapter 60, Part II, Article 2 - MACT

There is no applicable MACTs for steam generating units the Boiler MACT (40 CFR 63 Subpart DDDDD) exempts electric utility steam generating units in section 63.7491(c).

H. Future Applicable Requirements

The PRGS will be subject to the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR) effective January 1, 2009. Under Phase I CAIR, the facility will be allocated 701 tons of NOx emissions during the ozone season and 1,162 tons of NOx and 6,025 tons of SO2 annually.

The facility will not be subject to the requirements of Best Available Retrofit Technology (BART) in EPA's Regional Haze Rule because all boilers were constructed between 1949 and 1957 and the BART applies to units constructed after August 7, 1962 but prior to August 7, 1977.

I. Dispersion Modeling

Currently under evaluation. To be distributed next week.

J. Toxic Pollutants

The facility is not subject to the state toxics rule. 9VAC 5-60-300 C.5. exempts stationary sources regulated by an emission standard in section 112 of the Clean Air Act. The facility will be subject to CAMR.

K. Title V Review - 9 VAC 5 Chapter 80, Article 1

The facility is a Title V major source of sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM<sub>10</sub>), and carbon monoxide (CO). The VDEQ-Northern Virginia Region Office is currently drafting the Title V permit and Statement of Basis for the facility. All applicable requirements resulting from this permit action will be incorporated into the Title V permit.

VII. Compliance Demonstration

Currently under evaluation. To be distributed next week.

VIII. List of Attachments

Currently under evaluation. To be distributed next week.





NVRO-106-98

COMMONWEALTH of VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY

CONSENT AGREEMENT  
WITH

Potomac Electric Power Company  
1900 Pennsylvania Ave., N.W.  
Washington, D.C. 20068-0001

Registration No. 70228

SECTION A: Purpose

This Agreement establishes a Reasonably Available Control Technology (RACT) standard for the Potomac Electric Power Company (PEPCO) for the control of nitrogen oxides (NO<sub>x</sub>) emissions at the Potomac River Generating Station as required by the State Implementation Plan (SIP) and 9 VAC 5-40-310 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution.

This Agreement also establishes additional NO<sub>x</sub> emission standards in Section E, Subsection 2, as part of the ozone attainment plan and in Section E, Subsection 3, as part of the regional phase-II NO<sub>x</sub> controls.

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" 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.

"Major Stationary Source" means any stationary source which emits, or has the potential to emit 100 tons per year or more of any pollutant subject to regulation under the federal Clean Air Act, or 50 tons per year or more of volatile organic compounds or nitrogen oxides in ozone nonattainment areas classified as serious in 9 VAC 5-20-204 of the SAPCB Regulations. The area in which the affected facility is located is a nonattainment area classified as serious in 9 VAC 5-20-204 of the SAPCB Regulations.

"MDE" means the Maryland Department of the Environment which is the state agency responsible for handling matters affecting air quality in Maryland.

"Metropolitan Statistical Area" or "MSA" means that area designated as a metropolitan statistical area by the Bureau of the Census.

"National Capital Interstate Air Quality Control Region" or NCIAQCR means the National Capital Interstate Air Quality Control Region as defined by Code of Federal Regulations - Title 40, Section 81.12, which includes the District of Columbia; Montgomery and Prince Georges County in Maryland; Arlington, Fairfax, Loudoun and Prince William Counties in Virginia; and, the cities of Alexandria, Fairfax, and Falls Church in Virginia.

"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.

"Nonattainment area" means those areas of the Washington, DC metropolitan area in Virginia, Maryland, and the District of Columbia which have been designated in the State Implementation Plans for the respective jurisdictions as having a "nonattainment" status with respect to the national ambient air quality standard for ozone.

"NO<sub>x</sub>" means nitrogen oxides as defined by 9 VAC 5-10-20 of the SAPCB Regulations.

"Ozone Attainment Plan" means that portion of the "SIP" that is required to bring Northern Virginia into compliance with the National Ambient Air Quality Standard (NAAQS) for ozone.

"PEPCO" means the Potomac Electric Power Company with electric power generating stations in Maryland, Virginia, and the District of Columbia

"Phase II NO<sub>x</sub> Controls" means controls on nitrogen oxides (NO<sub>x</sub>) emissions that enable the Commonwealth of Virginia to satisfy its commitment to obtain, if justified by modeling results, emissions reductions similar to those proposed in the Memorandum of Understanding signed on September 27, 1994 by eleven of the thirteen members of the Ozone Transport Commission (established pursuant to the Clean Air Act Amendments of 1990). Virginia was not one of the signing members.

"Potomac River Station" or "affected facility" means Potomac Electric Power Company's Potomac River Generating Station located at 1400 N. Royal Street, Alexandria, Virginia.

"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 both reasonably available, as well as technologically and economically feasible.

"Regional Director" means the Director of the Northern Virginia Regional Office of the Department of Environmental Quality, 13901 Crown Ct., Woodbridge, Virginia.

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

"SIP" or "State Implementation Plan" means the portion or portions of the plan or the most recent revision thereof, which has been approved under § 110 of the federal Clean Air Act, or promulgated under § 110(c) of the federal Clean Air Act, or promulgated or approved pursuant to regulations promulgated under § 301(d) of the federal Clean Air Act and which implements the relevant requirements of the federal Clean Air Act

"Separated Over-fired Air" or "SOFA" means the addition of combustion air into the furnace above the location of fuel-rich burners in order to complete combustion at a lower temperature than occurs when complete combustion occurs at the burners.

"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.

"Title IV AEL demonstration period" means the period from January 1, 1996 through March 31, 1998 during which PEPCO will demonstrate to the U.S. EPA what should be an appropriate alternative NO<sub>x</sub> emission limit for Chalk Point Station Units 1 and 2 to comply with Title IV (acid rain provisions) of the Clean Air Act.

"Units" means the individual electrical generating systems, which utilize boilers to produce steam externally to the generator turbines. Each of the five units at the Potomac River Station are uniquely designated by one of the numbers from 1 through 5.

"Units subject to NO<sub>x</sub> RACT" means the following units within the PEPCO system: Units 1, 2, 3, 4 and 5 at the Potomac River Station in Virginia; Units 1, 2 and 3 at the Dickerson Station in Maryland; Units 1, 2, 3 and 4 at the Chalk Point Station in Maryland; and, Units 1 and 2 at the Morgantown Station in Maryland.

"VOC-limited" means that the ambient concentration of volatile organic compounds (VOC) compared to the ambient concentration of NO<sub>x</sub> is such

that the concentration of ozone is more a function of the availability of VOC than of NO<sub>x</sub>.

"VOC" means volatile organic compounds as defined by 9 VAC 5-10-20 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. 9 VAC 5-20-130 of the SAPCB Regulations contains the Delegation of Authority from the Board to the Director. In subdivision C 1 of 9 VAC 5-20-130 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 PEPCO operates an electric power generating station at 1400 N Royal Street in Alexandria, Virginia.
- 2 9 VAC 5-40-300 and 5-40-310 (formerly Sections 120-04-0407 and 120-04-0408 of the SAPCB Regulations), which became effective on July 1, 1991 and January 1, 1993, respectively, require RACT for all non-CTG major stationary sources of VOC emissions and all major stationary sources of NO<sub>x</sub> emissions in the Northern Virginia Ozone Nonattainment Area which includes the Cities of Alexandria, Fairfax, Falls Church, Manassas, Manassas Park, and the Counties of Arlington, Fairfax, Loudoun, Prince William and Stafford.
- 3 By letter dated February 25, 1993, DEQ notified PEPCO that the Potomac River Station may be subject to RACT for NO<sub>x</sub> emissions. The letter required PEPCO to notify DEQ of Potomac River Station's RACT applicability status, make a commitment to determine what would constitute RACT, and provide DEQ with a schedule for achieving compliance by May 31, 1995.
- 4 By letter dated March 26, 1993, PEPCO notified DEQ that it concurs that the Potomac River Station (Units 1-5) are subject to RACT for NO<sub>x</sub> emissions. The letter stated that PEPCO intends to utilize "interstate trading" of emissions reductions among its network of units in the National Capital Interstate Air Quality Control Region (NCIAQCR) to provide the most cost-effective means of complying with RACT system-wide. The letter also said that retrofitting each unit in the system to meet RACT for each unit by itself could not be accomplished by the statutory compliance date of May 31, 1995. Not all of the facilities are actually in the NCIAQCR as defined by 40 CFR Part 81; the Morgantown Station is in Charles County, Maryland, which is, however, located within the Washington, DC-MD-VA MSA. Section 107 (d)(3)(E)(4) of the Clean Air Act requires that all counties within the MSA of an area which has been designated nonattainment with respect to the national ambient air quality standard for ozone be included within the "nonattainment area" for regulatory purposes.
- 5 By letter dated May 27, 1993, PEPCO informed DEQ that it would submit a RACT analysis for all company facilities by July 1, 1993.

- 6 By letter dated July 2, 1993 and its appendices, PEPCO proposed to DEQ that it would meet the "presumptive RACT limit" (in Appendix T of the SAPCB Regulations). However, this would not be done by reducing emissions at the Potomac River Station units. Rather, emissions would be reduced beyond RACT levels at other units in the PEPCO system. The excess reductions at those other units would be of sufficient quantity to equal or exceed the reductions that otherwise would have been obtained by imposing RACT on each of the Potomac River Station units. Not only would the excess reductions be sufficient to offset reductions not being made at Potomac River Station, but would offset reductions not being made at some RACT-subject PEPCO units in Maryland, as well.
- 7 With letter dated August 31, 1993, PEPCO submitted to DEQ a document entitled NO<sub>x</sub> RACT Implementation Plan which further described PEPCO's proposal for satisfying the aggregate NO<sub>x</sub> RACT reduction requirements of the 16 PEPCO steam electric generating units within the NCIAQCR. This document noted that the proposed plan would be in effect prior to the statutory compliance date of May 31, 1995, whereas, it would be impossible to retrofit all of the NO<sub>x</sub> RACT-subject units with their own controls by May of 1995. The document also stated that retrofitting each unit with RACT controls was estimated to have a capital cost of \$373 million, whereas the PEPCO proposal capital cost was estimated to be just \$154 million.
- 8 By letter dated November 22, 1993, DEQ expressed concern to PEPCO that the interstate trading proposal it submitted July 2, 1993 was not consistent with SAPCB Regulations and that PEPCO should submit a new RACT plan that would be consistent with the regulations.
- 9 By letter to DEQ dated December 16, 1993, PEPCO disagreed that the plan proposed on July 2 was contrary to SAPCB regulations. Included with the letter were preliminary ozone formation modeling results that indicated that controlling NO<sub>x</sub> at the Potomac River Station would not be as beneficial to Virginia and the District of Columbia (D.C.) as controlling it at PEPCO's Morgantown Station.
- 10 At a meeting on March 10, 1994 comprised of representatives from MDE, the District of Columbia Department of Consumer and Regulatory Affairs (DC DCRA), the Alexandria, Virginia Health Department, and DEQ, the Alexandria representative expressed concern that Alexandria residents would not readily accept a RACT

plan that has no apparent benefit to air quality in Alexandria, and that at a minimum a regulatory cap, limiting emissions to the current rate, should be imposed on the Potomac River Station as part of any multiple facility emissions averaging plan.

- 11 By letter to DC's Air Resources Management Division, dated March 18, 1994, PEPCO requested exclusion of its Benning Station (the only one in DC that would have been included in the system-wide emissions averaging) from the system-wide emissions averaging plan on the grounds that it can otherwise meet the DC RACT requirements.
- 12 By letter to MDE, dated June 23, 1994, PEPCO reported on NO<sub>x</sub>-reduction improvements to the boilers at the Chalk Point and Morgantown Stations. SOFA did not seem to be very effective at Chalk Point, but the vendor-guaranteed levels at Morgantown using SOFA were apparently being met. Negative impacts of SOFA at Morgantown were yet unknown. The letter went on to state that PEPCO does not believe that RACT should be based on application of SOFA, since it is not commonly required elsewhere and such technology must be customized to each unit. The letter also reported that ongoing modeling efforts continue to support the contention that immediate Washington area NO<sub>x</sub> reductions would only hamper ozone reduction efforts, due to the area ozone concentrations being VOC-limited.
13. At meetings held on September 12, 1994 and October 19, 1995, comprised of representatives from PEPCO, District of Columbia Department of Consumer and Regulatory Affairs (DC DCRA), MDE, the Alexandria, Virginia Health Department, and DEQ, the participants agreed to draft a memorandum of understanding (MOU) among Maryland, Virginia, and the District of Columbia that would serve as a guide for each jurisdiction to reach an enforceable agreement with PEPCO regarding an interstate emissions averaging strategy to implement RACT.
- 14 PEPCO began sending RACT monitoring compliance reports to MDE and DEQ on July 11, 1995, demonstrating that the system-wide RACT plan that PEPCO had previously proposed has been in effect since May 31, 1995, despite not having been approved or required by the jurisdictions involved.

15 By letter dated August 2, 1995, MDE informed PEPCO (and sent a copy to DEQ) that MDE had determined that the RACT that PEPCO had proposed is indeed RACT. Substitution of a portion of the NO<sub>x</sub> reductions that PEPCO made at the Chalk Point and Morgantown Stations for RACT reductions at the Potomac River Station was contingent on Maryland determining that the proposed reductions at Chalk Point and Morgantown were more than required for site-specific RACT at those facilities. The August 2 letter is accepted by DEQ as confirmation that surplus creditable reductions could occur from those Maryland-based stations. (As noted in paragraph D.11, actual reductions from the Chalk Point Station may fall short of the proposed, but experience to date indicates that the surplus at Morgantown is still sufficient to offset the deficit at Potomac River and the other PEPCO stations to which RACT controls are not being applied.)

16 On the basis of documentation supplied with the RACT proposal to DEQ by PEPCO, NO<sub>x</sub> emissions and reductions are estimated to be as follows (in tons per year):

	Potomac River Station		All PEPCO RACT Units	
	Potential	Actual	Potential	Actual
Before RACT	12,921 or more	10,545	131,729	89,749
After RACT if <u>each</u> unit controlled	8,249	6,901	96,871	70,761
Minimum reduction if <u>each</u> unit controlled	4,672	3,644	34,858	18,988
After Proposed RACT	12,921	10,545	96,871	70,761
Minimum reduction if RACT as proposed	0	0	34,858	18,988

where: potential emissions are based on year-round (8760 hours) operation at the assumed maximum sustainable emission rate per

unit of heat input. The assumed rates are based on past tests of the units. "Actual" emissions (as presented in the table above) are based on PEPCO's projected annual load profile, not measured emissions, so they are actually theoretical emissions. The "before RACT" actual emissions assume emission rates that vary with load as determined by testing. The other actual emissions presume the maximum allowable emission rate at the average annual load profile. Given the inherent variability from one day to the next, the real annual emissions in each category would have to be less than those presented, in order to achieve compliance with the allowable limit on a daily basis and at varying loads. Real CEM data indicate average emission rates prior to this agreement have been well below the theoretical "actual" rates. Although "potential" emission rates are often based on the maximum allowable or the greatest physically possible, the "before RACT" and "proposed RACT" potential emissions for the Potomac River Station in the table above are intentionally based on neither. Use of "potential" based on assumed maximum sustainable rates, rather than the allowable limits for each unit specified in Section E of this Agreement, is done so that the comparisons are meaningful. There were no NO<sub>x</sub> limits on the Potomac River units until PEPCO elected to accept early NO<sub>x</sub> limits under Title IV (acid rain provisions) of the Clean Air Act and until this Agreement posed limits. The limits specific to the Potomac River Station imposed by this Agreement are caps based on the highest daily emissions recorded during a year. Those caps were purposefully set well above the mean to account for operational extremes, and therefore, reductions calculated from such limits would be misleading. On the other hand, the system as a whole could sustain operation near the limit imposed by this Agreement.

17. By letter dated June 13, 1996, PEPCO informed DEQ that it studied data from the NO<sub>x</sub> continuous emissions monitoring (CEM) system at the Potomac River Station during the last seven months of 1995. By fitting the data from each unit to a normal distribution, PEPCO determined that emission rates averaging greater than the following over a calendar day have a probability of occurring less than once per year:

Unit 1	0.77 lb/10 <sup>6</sup> Btu	Unit 3	0.86 lb/10 <sup>6</sup> Btu
Unit 2	0.73 "	Unit 4	0.83 "
		Unit 5	0.80 "

The highest probable emission rate in a year for any unit within each of the two groups of similar type units above, should serve as an emissions cap representative of maximum pre-RACT emissions for every unit within the same type group.

- 18 By letter dated February 7, 1996, PEPCO informed DEQ that the highest rate of total NO<sub>x</sub> emission from the units subject to NO<sub>x</sub> RACT, excluding either of the Morgantown Units, was 206.9 tons/day during days of high utilization in July and August of 1995.
- 19 By letter dated March 21, 1996, PEPCO informed both the State of Maryland and DEQ that the Chalk Point Units 1 and 2 cannot maintain the proposed RACT limit of 0.70 lb/10<sup>6</sup> Btu averaged over 24 hours, on a long-term basis. PEPCO is working with its control technology vendor to achieve the lowest feasible NO<sub>x</sub> emission rate using low-NO<sub>x</sub> burner (LNB) technology. It is possible to achieve an NO<sub>x</sub> emission rate in the 0.70 to 0.90 lb/10<sup>6</sup> Btu range.
- 20 Chalk Point Units 1 and 2 are subject to NO<sub>x</sub> emission limitations under Title IV of the Clean Air Act. Under Title IV, if a unit is unable to meet the presumptive NO<sub>x</sub> limit of 0.5 lb/10<sup>6</sup> Btu for wall-fired boilers, it must apply for an Alternative Emission Limit (AEL) to determine the NO<sub>x</sub> emission limit that can be achieved with LNB technology. PEPCO has applied to the U.S. EPA and received approval on August 19, 1996 for Chalk Point's NO<sub>x</sub> AEL demonstration period and on March 6, 1997 received approval for an extension of the demonstration to March 31, 1998. The demonstration period covers an extensive testing and burner optimization program to determine the maximum long-term NO<sub>x</sub> emission reduction attainable with LNBs.
- 21 The State of Maryland has accepted a proposal by PEPCO to set an interim daily NO<sub>x</sub> RACT emission limit for Chalk Point Units 1 and 2 during the AEL demonstration period to be equal to its actual 24-hour average emission rate, not to exceed 0.9 lb/10<sup>6</sup> Btu. Emissions of less than 0.7 lb/10<sup>6</sup> Btu would be considered to be less than the baseline for RACT. A final NO<sub>x</sub> RACT emission limit will be set by the State of Maryland at the end of the AEL demonstration period.
- 22 The jurisdictions composing the NCIAQCR are responsible under the Clean Air Act Amendments of 1990 for submitting a plan to EPA to

demonstrate that reductions in emissions of NO<sub>x</sub> and VOCs to be imposed in those jurisdictions will be sufficient to bring the metropolitan Washington area into attainment of the one-hour ambient ozone standard by 1999. This plan depends on reductions that exceed those projected as a result of the implementation of RACT.

- 23 The Potomac River Generating Station is subject to NO<sub>x</sub> emission limits under the Title IV Clean Air Act Amendments Acid Rain Program. In order to comply with the Title IV NO<sub>x</sub> emission limits PEPCO has incorporated methods of reducing NO<sub>x</sub> emissions at the Potomac River Station that have resulted in the heat input-based emissions rate being 18% lower from Units 1 & 2 and 28% less from Units 3,4 & 5 than was anticipated when the RACT plan was proposed. When also allowed to take credit for excess (greater than RACT) reductions elsewhere in the PEPCO system, the Potomac River Station is well-below the "presumptive RACT limit" of 0.38 pounds NO<sub>x</sub> per million Btu's of heat input stated in 9 VAC 5-40-311 (formerly Appendix T of the SAPCB Regulations).
- 24 Because of the surplus of reductions cited above, PEPCO accepts a lower limit on NO<sub>x</sub> emissions during the ozone season (May 1 - September 30) than would be required for meeting the RACT requirements of 9 VAC 5-40-310 and 9 VAC 5-40-311, so that DEQ may incorporate the excess reductions into the ozone standard attainment demonstration plan. To comply with the lower emissions limit, PEPCO could accrue credits for reductions beyond RACT requirements at other PEPCO facilities on behalf of the Potomac River Station, just as would be the case for demonstrating compliance with RACT.
- 25 The attainment plan is based on emission rates averaged over the entire ozone season, therefore, compliance for PEPCO with the "beyond RACT" limits may be based on averaging emission rates over the ozone season; whereas, 9 VAC 5-40-311 requires RACT compliance on a daily basis.
- 26 DEQ has determined that additional NO<sub>x</sub> emissions reductions will be necessary in Northern Virginia as part of the effort to bring the region and neighboring regions into full attainment of the ozone standard. To be consistent with a decision by the Ozone Transport Commission (OTC) to require a 65 percent reduction in

NO<sub>x</sub> emissions DEQ requests a commitment by PEPCO for such a reduction.

27 This Agreement is signed following an advertised public comment period and public hearing on the RACT portion of the Agreement. In order to incorporate provisions into this Agreement that would enforce the beyond-RACT reductions necessary to satisfy the attainment plan, without altering the RACT agreement presented for public comment, the Agreement is divided into three subsections. The first subsection consists of the RACT agreement as presented for public comment and the second subsection adds provisions that enforce additional reductions to be incorporated into the ozone standard attainment demonstration plan. The third subsection commits PEPCO to 65% reductions of NO<sub>x</sub> emissions from the 1990 baseline as part of the "Phase II NO<sub>x</sub> Control" plan.

28 A comparison of baseline and RACT NO<sub>x</sub> emissions, and beyond-RACT reductions of NO<sub>x</sub> emissions during the ozone season is as follows (in tons):

	Potomac River Station Potential	Station Actual	All PEPCO RACT Units Potential	Actual
Before RACT	5,416	2,829	55,218	
After Proposed RACT	5,416	2,829	40,606	
Minimum reduction if RACT as proposed	0	0	14,612	
NO <sub>x</sub> Limits under Title IV	4,109	2,108		
Minimum reduction by Attainment Plan provisions compared to before RACT	0	0	15,392	
Reduction beyond RACT by Attainment Plan provisions	(See text below)	(See text below)	780	436

The explanatory note under the table in paragraph D.16 is applicable to the this table as well, except that the term "year-round" should be replaced by "continuous," since this table only refers to the ozone season (May 1 - September 30). DEQ does not have data on ozone season heat input for the entire PEPCO system, so system-wide "actual" emission rates and reductions are excluded in this table, except for the "beyond-RACT" reductions that allow PEPCO to comply with the "Attainment Plan" provisions of Section E., Subsection 2 of this Agreement. Those reductions are legally presumed, but not required, to come from the Potomac River Station, which is why this table shows no reductions for the Potomac River Station. Only the system-wide reductions are enforceable by this agreement. However, apart from this agreement, the Title IV NO<sub>x</sub> emission rate limit (0.45 lb/10<sup>6</sup> Btu) is legally enforceable; therefore, maximum ozone season emissions from the Potomac River Station under Title IV are shown in this table. Title IV emissions are averaged annually, so the total Potomac River emissions shown for the ozone season are an estimate rather than a firm, ozone-season limit. Nevertheless, unlike the emissions reductions necessary to comply with the formula-based emission limits of this Agreement, reductions to satisfy the Title IV limits for the Potomac River Station must actually occur at the Potomac River Station and not just be "presumed" to occur there. Since reductions for Title IV purposes are also counted for compliance purposes with the provisions of this Agreement, some of the reductions (at least the amount required to meet Title IV) necessitated by this Agreement really will have occurred at the Potomac River Station, even though the Agreement does not specify where they occur.

SECTION E: Agreement

Accordingly, the Board and PEPCO agree that:

Subsection 1: RACT

1. NO<sub>x</sub> emissions from the affected facility shall be controlled and reduced as outlined in this Agreement
  
2. NO<sub>x</sub> emissions may, but are not required to be reduced from 1990 (baseline year) levels at the Potomac River Station; however, the Potomac River Station units shall not be considered to be in compliance if the total NO<sub>x</sub> emissions from all of the NO<sub>x</sub> RACT-subject units within the PEPCO system combined are greater for any calendar day than would have been the case if each unit in the system were required to meet the unit-specific, heat input-based NO<sub>x</sub> RACT emission limits below, except as allowed by other paragraphs of this agreement.

Unit-specific NO<sub>x</sub> RACT Emission Rates

<u>Station/Unit</u>	<u>RACT Limit</u> <u>(lb NO<sub>x</sub>/10<sup>6</sup> Btu)</u>
Potomac River #1	0.38
"      " #2	0.38
#3	0.38
#4	0.38
#5	0.38
Dickerson #1	0.53
"      #2	0.53
#3	0.53
Chalk Point #1	0.70 - 0.90*
#2	0.70 - 0.90*
#3	0.25
#4	0.25
Morgantown #1	0.94
#2	0.94

\*Applies during the Title IV AEL demonstration period. The unit-specific RACT limit for Chalk Point Units 1 and 2, as applied to the right-hand side of the compliance equation of this paragraph, shall be equal to the actual measured NO<sub>x</sub> rates, but not less than 0.70 lb/10<sup>6</sup> Btu nor greater than 0.90 lb/10<sup>6</sup> Btu. This can be determined by dividing both sides of the compliance equation by the daily heat input for the applicable unit. After completion of the AEL demonstration period, the unit-specific emission limit shall become a single revised limit equivalent to what the State of Maryland sets as a RACT baseline for each unit. If the State of Maryland fails to set a RACT baseline within six months following the completion of the AEL demonstration period, the AEL's approved by U.S. EPA (or if not yet approved, as proposed by PEPCO to U. S. EPA) shall serve as the unit-specific emission limits for Chalk Point Units 1 and 2, until Maryland sets a RACT baseline for each unit.

Compliance with this paragraph shall be demonstrated with the following equation:

$$\sum_{i=1}^{14} (\text{Actual Daily Emissions}_i) \leq \sum_{i=1}^{14} [(\text{RACT Limit}_i) \times (\text{Daily Heat Input}_i)]$$

where  $\Sigma$  is the sum of all  $i$  units, 1 through 14;

$i$  is a unit subject to NO<sub>x</sub> RACT

*Actual Daily Emissions* are the total NO<sub>x</sub> emissions (measured as if converted to NO<sub>2</sub>) from each unit on any day in pounds per day;

*RACT Limit* is the Unit-specific RACT emission limit from the table of this paragraph;

*Daily Heat Input* is the total daily heat input to each unit on that day, as determined by continuous monitors.

3. NO<sub>x</sub> emissions (reported as NO<sub>2</sub>) from the boilers of Potomac River Station Units 1, 2, 3, 4 and 5 shall be limited to the following rates for each boiler:

Unit 1	0.77 lb .0 <sup>6</sup> Btu
Unit 2	0.77
Unit 3	0.86
Unit 4	0.86
Unit 5	0.86

averaged over each calendar day. The limits for the Potomac River Station shall not apply to a unit during any calendar day in which the unit's boiler has been fired less than six hours.

4. On any calendar day during which one of the Morgantown Station units has not operated at 50 percent or more of its rated daily fuel (in Btu's) capacity, compliance with paragraph E.2 of this agreement is not required, so long as the total emissions from the units subject to NO<sub>x</sub> RACT do not exceed 210 tons for the day and compliance with paragraph E.3 of this agreement is achieved.
5. Failure to comply with the requirements of this agreement shall not only subject PEPCO to the normal enforcement actions available to the Board, but repeated failure to comply with the requirements of this agreement shall be cause for requiring PEPCO to meet the requirements of 9 VAC 5-40-311 of the State Air Pollution Control Board Regulations by modifications to the Potomac River Station alone.
6. Actual NO<sub>x</sub> emissions shall be determined by continuous monitoring. A continuous emissions monitoring (CEM) system shall be installed on each flue from the units subject to NO<sub>x</sub> RACT to measure the mass emission rate of NO<sub>x</sub>. The CEM systems required by this paragraph shall be operated and maintained in accordance with 40 CFR, Part 75 Subpart C.
7. A quarterly compliance report of data from the NO<sub>x</sub> CEM systems and the heat input records shall be submitted to the Regional Director within 30 days following the quarters ending March 31, June 30, September 30 and December 31. As a minimum the compliance reports shall contain:

- a The design capacity heat input ( $10^6$  Btu/day) for each unit.
- b The actual daily heat input ( $10^6$  Btu) for each unit
- c. The actual daily emissions (tons/day) for each unit
- d. The daily emissions (tons/day) that would be allowed for each unit by the unit-specific RACT limits in Paragraph 2
- e The daily actual and allowable emissions (tons/day), representing each side of the compliance equation in Paragraph 2.
- f. Dates of any non-compliance with Paragraph 2 and/or Paragraph 3, the reasons for non-compliance and the corrective action(s) taken.
- g Dates and times of a CEM system outages and corrective actions taken.
- h Results of the daily CEM system calibration drift checks  
Results of the 40 CFR, Part 75, quality assurance audits

Data that may or must be tabulated to comply with this paragraph may be presented in the compliance report either as one table of all units for each day or may be presented as daily tables of all units for items a. through e. and separate daily or other type of tables for item h. The other items may be presented in any reasonable manner.

- 8. In addition to the quarterly compliance reports, all violations of the emissions limits of paragraphs 2, 3, and 4 of this agreement shall be reported by telephone, telegraph or facsimile transmission to the Northern Virginia Regional office on or before the third business day following the day of the violation. Accompanying any report (oral or otherwise) of an emissions limit violation shall be a statement describing how PEPCO intends to curtail the violation and prevent reoccurrence.
- 9 PEPCO shall grant access to representatives of the Maryland Department of the Environment (MDE) to the NO<sub>x</sub> RACT-subject units

in Maryland and to the operating records for same including those pertaining to the CEMs to the extent that MDE deems necessary to ensure on behalf of the Virginia Department of Environmental Quality (Department) that the data reported to the Department are valid.

- 10 At any time in the future, should PEPCO plan any modifications (within the context of the new source review program) of the affected facility covered by this Agreement, PEPCO 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.
  1. The Board may modify, rewrite, or amend this Agreement with the consent of PEPCO, for good cause shown by PEPCO, or on its own motion, provided approval of the changes is accomplished in accordance with 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).
  2. So long as this Agreement remains in effect, PEPCO 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.
- 13 Failure by PEPCO 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 nor shall it diminish PEPCO's right to a fair hearing or judicial review of any enforcement action taken.
- 14 PEPCO declares it has received fair and due process under the Administrative Process Act (§ 9-6.14:1 et. seq.).
- 15 This Agreement shall become effective upon signature by both parties and shall continue in effect indefinitely or until otherwise terminated by the Board.

Subsection 2: Ozone Attainment Plan

1. In addition to the provisions of the paragraphs of Subsection 1 of this Agreement, the provisions of the paragraphs below shall also apply.
2. The provisions of Subsection 2 become effective May 1, 1998
3. The Potomac River Station units shall not be considered to be in compliance if the total NO<sub>x</sub> emissions from all of the PEPCO units tabulated below are greater for any ozone season (May 1 through September 30) than would have been the case if each unit in the system were required not to exceed the unit-specific, heat input-based NO<sub>x</sub> emission rates below.

Unit-specific NO<sub>x</sub> Emission Rates

<u>Station/Unit</u>	<u>NO<sub>x</sub> Emission Rate</u> <u>(lb NO<sub>x</sub>/10<sup>6</sup> Btu)</u>
Potomac River #1	0.31
" " #2	0.31
" " #3	0.28
" " #4	0.28
" " #5	0.28
Dickerson #1	0.53
" #2	0.53
" #3	0.53
Chalk Point #1	0.70 - 0.90*
" " #2	0.70 - 0.90*
" " #3	0.25
" " #4	0.25
Morgantown #1	0.94
" #2	0.94

\*See footnote for Subsection 1, paragraph 2

Compliance with this paragraph shall be demonstrated with the following equation:

$$\sum_{i=1}^{14} (\text{Actual Ozone Season Emissions}_i) \leq \sum_{i=1}^{14} [(\text{NO}_x \text{ Rate}_i) \times (\text{Ozone Season Heat Input}_i)]$$

where:  $\Sigma$  is the sum of all  $i$  units 1 through 14;

$i$  is a subject unit;

*Actual Ozone Season Emissions* are the total NO<sub>x</sub> emissions (measured as if converted to NO<sub>2</sub>) from each unit during the period May 1 through September 30 in pounds;

*NO<sub>x</sub> Rate* is the unit-specific NO<sub>x</sub> emission rate from the table in this paragraph;

*Ozone Season Heat Input* is the total heat input in millions of Btu's to each unit during the period May 1 through September 30, as determined by continuous monitors.

Subsection 3: Phase II NO<sub>x</sub> Control

- 1 The emissions limits of the paragraphs above of this Agreement notwithstanding, beginning in the year 2002 or according to the schedule established by the Maryland Department of the Environment (MDE) for the PEPCO plants in Maryland, NO<sub>x</sub> emissions at the Potomac River Station during the ozone season (May 1 - September 30) shall not exceed 1148 tons (a 65% reduction from the 1990 baseline).
2. The NO<sub>x</sub> emissions reductions and limits required by the paragraphs of this Subsection may be achieved by interstate and intrastate emissions trading.
- 3 In order to establish an effective compliance plan for the Potomac River Station, PEPCO agrees to enter into a consent agreement with DEQ as soon as a schedule for the Maryland powerplants has been established by MDE or by June 1, 1999, whichever is earlier.

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 Potomac Electric Power Company, each by its duly authorized representatives, or self, on the dates indicated below.

DEPARTMENT OF ENVIRONMENTAL QUALITY  
OF THE COMMONWEALTH OF VIRGINIA

\_\_\_\_\_  
(date) BY \_\_\_\_\_  
Dennis H Treacy  
Director

POTOMAC ELECTRIC POWER COMPANY

7/10/98  
(date) BY James S. Potts  
James S. Potts  
Vice President,  
Environment

DISTRICT OF COLUMBIA

The foregoing instrument was acknowledged before me this 10<sup>th</sup> day of July, 1998, by James S. Potts, Vice President, Environment of Potomac Electric Power Company, a District of Columbia Corporation, on behalf of the Corporation.

My commission expires July 31, 2002

Jessie A. Poole  
Notary Public

NVRO-061

June 5, 2000

Mr. James S. Potts  
Vice President, Environment  
Potomac Electric Power Company  
1900 Pennsylvania Ave., NW  
Washington, D.C. 20068-0001

Location: City of Alexandria  
Registration No: 70228  
County-Plant No: 510-0003

Dear Mr. Potts:

Attached is a permit to operate an electric power generating station in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This permit is for the purpose of implementing the Reasonably available control technology (RACT) requirements of 9 VAC 5-40-300 of the Board's Regulations. Except to the extent that conditions may be more stringent, this permit does not supersede or replace any other valid permit. Furthermore, this approval to operate shall not relieve Potomac Electric Power Company of the responsibility to comply with all other local, state and federal permit regulations.

The permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and civil penalty. Please read all permit conditions carefully.

9 VAC 5-170-200 of the Board's Regulations provides that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. Please consult the relevant regulations for additional requirements for such requests.

Additionally, as provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal to court by filing a Notice of Appeal with:

Mr. James S. Potts  
June 5, 2000  
Page 2

Dennis H. Treacy, Director  
Department of Environmental Quality  
P.O. Box 10009  
Richmond, Virginia 23240-0009

In the event that you receive this permit by mail, three days are added to the period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for additional information including filing dates and the required content of the Notice of Appeal.

If you have any questions concerning this permit, please call the regional office at (703) 583-3840.

Sincerely,

Gregory L. Clayton  
Regional Director

GLC/CDF/TJG/JRM/jrm

File: PEPCO-RACT-VOC-SOP.doc

Attachments: Permit

cc: Director, OAPP (electronic file submission)  
Manager, Data Analysis (electronic file submission)

COMMONWEALTH OF VIRGINIA OPERATING PERMIT

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,

Potomac Electric Power Company  
1900 Pennsylvania Ave., NW  
Washington, D.C. 20068-0001  
Registration No. 70228  
County-Plant No. 510-0003

is authorized to operate

an electric power generating station

located at

1400 N. Royal Street  
Alexandria, Virginia

in accordance with the Conditions of this permit and all other applicable permits and regulations of the State Air Pollution Control Board.

Approved on \_\_\_\_\_

Dennis H. Treacy  
Director

Permit consists of 3 pages.  
Permit Conditions 1 to 8.

PERMIT CONDITIONS - the regulatory reference and authority for the condition is listed in parentheses ( ) after each condition.

1. This permit establishes source-specific emission standards and/or other requirements to implement reasonably available control technology (RACT) as required by 9 VAC 5-40-300 of the State Air Pollution Control Board's Regulations. The affected facility is also subject to (NO<sub>x</sub>) RACT requirements of 9 VAC 5-40-310 and 9 VAC 5-40-311, but the requirements of these regulations as they pertain to the Potomac Electric Power Company are covered by an enforceable document separate from this permit.  
(9 VAC 5-80-800 C.2.b of State Regulations)
2. Equipment subject to 9 VAC 5 Chapter 40, Article 4 and RACT requirements pursuant to Section 182 of the federal Clean Air Act consists of:
  - two coal-fired Combustion Engineering boilers (C101 and C201), rated at  $970.1 \times 10^6$  Btu/hr heat input each;
  - three coal-fired Combustion Engineering boilers (C301, C401 and C501), rated at  $960.7 \times 10^6$  Btu/hr heat input each
3. Volatile organic compound (VOC) emissions from the five coal-fired boilers, including when fired with No. 2 fuel oil for ignition or flame stabilization, shall be controlled by optimizing combustion by means of a digital control system.  
(9 VAC 5-40-300 of State Regulations)
4. Exempted from the requirements of 9 VAC 5 Chapter 40, Article 4 for both volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>) are the following:
  - a. Process operations with a process weight rate capacity less than 100 pounds per hour;
  - b. Any combustion unit using solid fuel with a maximum heat input of less than 350,000 Btu per hour;
  - c. Any combustion unit using liquid fuel with a maximum heat input of less than 1,000,000 Btu per hour;
  - d. Any combustion unit using gaseous fuel with a maximum heat input of less than 10,000,000 Btu per hour.  
(9 VAC 5-40-240 of State Regulations)
5. At all times, including periods of startup, shutdown and malfunction, all units or processes, including any exempted by any conditions above, shall be maintained and operated to the

extent possible in a manner consistent with good air pollution control practice of minimizing emissions.  
(9 VAC 5-40-20 and 9 VAC 5-170-160 of State Regulations)

6. Methods for demonstrating and reporting compliance with the conditions of this permit, including a periodic demonstration that the digital control system for optimizing combustion is functioning properly, shall be incorporated in the federal operating ("Title V") permit for this facility. The records necessary to meet these requirements shall be as described in the federal operating permit and shall be retained by the permittee for a minimum of five years from the time that the relevant data was collected.  
(9 VAC 5-80-110)
7. In the event of any change in control of ownership of the permitted source, the permittee shall notify the succeeding owner of the existence of this permit by letter and send a copy of that letter to the Regional Compliance Manager.  
(9 VAC 5-80-940 of State Regulations)
8. A copy of this permit shall be maintained on the premises of the facility to which it applies.  
(9 VAC 5-80-860 of State Regulations)



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

James S. Gilmore, III  
Governor

John Paul Woodley, Jr.  
Secretary of Natural Resources

Northern Virginia Regional Office  
13901 Crown Court  
Woodbridge, VA 22193-1453  
(703) 583-3800 fax (703) 583-3801  
<http://www.deq.state.va.us>

Dennis H. Treacy  
Director

Gregory L. Clayton  
Regional Director

September 29, 2000

Mr. James S. Potts  
Vice President, Environment  
Potomac Electric Power Company  
1900 Pennsylvania Ave., NW  
Washington, D.C. 20068-0001

Location: City of Alexandria  
Registration No: 70228  
County-Plant No: 510-0003

Dear Mr. Potts:

Attached is a permit that authorizes Potomac Electric Power Company to operate an electric power generating station in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This permit is issued for the purpose of complying the requirements of Section 110.(a)(1) as they pertain to ozone. Section 110.(a)(1) of the Clean Air Act states that each state shall submit to the U.S. Environmental Protection Agency (EPA) a plan (State Implementation Plan) which implements, maintains, and enforces each primary and secondary standard of a national ambient air quality standard. The part of the SIP to which this permit is applicable is known as the attainment plan. The permit will ensure that the generation station will not contribute significantly to nonattainment in, or interfere with maintenance by, any other state of the national primary and secondary ambient air quality standard (for ozone) as mandated by Section 110. (a)(2)(D)(i) of the federal Clean Air Act. The facility-wide oxides of nitrogen (NO<sub>x</sub>) emission limit given in this permit is the same as the total of the individual unit limits specified in the Section 126 Petition Rule issued by EPA on December 15, 1999. However, compliance with this permit is not to be construed as compliance with the requirements of other rules and regulations, including, but not limited to, the Section 126 Petition Rule or the requirement to apply Reasonably Available Control Technology (RACT). Except to the extent that conditions may be more stringent, this permit does not supersede or replace any other valid permit. Furthermore, this approval to operate shall not relieve Potomac Electric Power Company of the responsibility to comply with all other local, state, and federal permit regulations.

Mr. James S. Potts  
September 29, 2000  
Page 2 of 2

The permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and civil penalty. Please read all permit conditions carefully.

9 VAC 5-170-200 of the Board's Regulations provides that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. Please consult the relevant regulations for additional requirements for such requests.

Additionally, as provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal to court by filing a Notice of Appeal with:

Dennis H. Treacy, Director  
Department of Environmental Quality  
P.O. Box 10009  
Richmond, Virginia 23240-0009

In the event that you receive this permit by mail, three days are added to the period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for additional information including filing dates and the required content of the Notice of Appeal.

Also attached is the summary of public comments with the response from this department.

If you have any questions concerning this permit, please call the regional office at (703) 583-3840.

Sincerely,

  
Gregory L. Clayton  
Regional Director

GLC/CDF/THD/JRM/jrm File: PEP-SIP-SOP-CAP FINAL.DOC

Attachments: Permit; Public Comments & Response

cc: Director, OAPP (electronic file submission)  
Manager, Data Analysis (electronic file submission)



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 10009, Richmond, Virginia 23240

Fax (804) 698-4500 TDD (804) 698-4021

<http://www.deq.state.va.us>

James S. Gilmore, III  
Governor

John Paul Woodley, Jr.  
Secretary of Natural Resources

Dennis H. Treacy  
Director

(804) 698-4000  
1-800-592-5482

### COMMONWEALTH OF VIRGINIA OPERATING PERMIT

#### 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,

Potomac Electric Power Company  
1900 Pennsylvania Ave., NW, Washington, D.C. 20068-0001  
Registration No. 70228  
County-Plant No. 510-0003

is authorized to operate

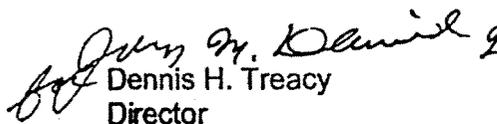
an electric power generating station

located at

1400 N. Royal Street  
Alexandria, Virginia

in accordance with the Conditions of this permit and all other applicable permits and regulations of the State Air Pollution Control Board.

Approved on September 18, 2000.

  
Dennis H. Treacy  
Director

Permit consists of 3 pages.  
Permit Conditions 1 to 9.

PERMIT CONDITIONS - the regulatory reference and authority for the condition is listed in parentheses ( ) after each condition.

1. This permit establishes source-specific emission standards to comply in part with the requirements of Section 110.(a)(1) of the federal Clean Air Act which require Virginia to submit a state implementation plan which will ensure compliance with the national primary and secondary ambient air quality standard (NAAQS) for ozone and to ensure, as mandated by Section 110. (a)(2)(D)(i) of the federal Clean Air Act, that the generating station will not contribute significantly to nonattainment in, or interfere with maintenance by, any other state with respect to the NAAQS for ozone. Except to the extent that it may be more stringent, this permit does not supersede any other local, state, or federal permit, regulation or enforceable agreement, including, but not limited to any such instrument to implement the Reasonably Available Control (RACT) provisions of 9 VAC 5-40-300 and 9 VAC 5-40-310. (9 VAC 5-80-800 C.2.b of State Regulations)

2. The equipment to which this permit applies is the following emissions units:

two coal-fired Combustion Engineering boilers (C101 and C201)\*, rated at  $970.1 \times 10^6$  Btu/hr heat input each;

three coal-fired Combustion Engineering boilers (C301, C401 and C501)\*, rated at  $960.7 \times 10^6$  Btu/hr heat input each

\*Identifying codes for boilers are from the federal operating permit ("Title V") application dated January 6, 1998.

(Section 9.2.1 of the proposed (February 3, 2000) State Implementation Plan Revision, Phase II Attainment Plan for the Washington DC-MD-VA Nonattainment Area)

3. During each ozone season (May 1 through September 30), the emission units to which this permit applies in combination shall not emit more than 1019 tons of oxides of nitrogen (measured as NO<sub>2</sub>). (9 VAC 5-80-800 C.2.b of State Regulations)
4. Compliance with requirements of Condition 3 shall begin no later than year 2003 and be demonstrated by continuous emissions monitoring of the NO<sub>x</sub> from each unit. (9 VAC 5-80-890 and 9 VAC 5-80-800 C.2.b of State Regulations; Section 110.(a)(1) of the federal Clean Air Act; and Section 1.0 of the proposed (February 3, 2000) State Implementation Plan Revision, Phase II Attainment Plan for the Washington DC-MD-VA Nonattainment Area)

5. A report presenting the results of the monitoring for each ozone season shall be submitted to the Department of Environmental Quality (DEQ) Regional Office on or before October 30 of the same year. The details of the monitoring, record keeping and reporting shall be prescribed by DEQ within 60 days following the issuance of this permit and shall be incorporated into the Title V permit. The permittee may propose details of the monitoring, record keeping and reporting to DEQ before DEQ fulfills the requirement to prescribe them within 60 days.  
(9 VAC 5-80-890 and 9 VAC 5-80-900 of State Regulations)
6. The records kept by the permittee to comply with Condition 5. shall be available on site for inspection by the DEQ and shall be current for at least the most recent five years.  
(9 VAC 5-80-900 and 9 VAC 5-80-110 F.1.b. of State Regulations)
7. As an alternative to compliance with Condition 3, the permittee may comply with 40 CFR Part 97 or a regulation of the Board approved by EPA as meeting the requirements of 40 CFR Part 96. This condition may be implemented for the units covered by either of the cited regulations once they become effective. The DEQ reserves the right to amend this permit as may be necessary should it determine that use of this alternative compliance measure will prevent the attainment or maintenance of the air quality standards in the Washington, DC Ozone Nonattainment Area.  
(9 VAC 5-80-800 C.1.c. of State Regulations)
8. In the event of any change in control of ownership of the permitted source, the permittee shall notify the succeeding owner of the existence of this permit by letter and send a copy of that letter to the DEQ Regional Compliance Manager.  
(9 VAC 5-80-940 of State Regulations)
9. A copy of this permit shall be maintained on the premises of the facility to which it applies.  
(9 VAC 5-80-860 of State Regulations)

## List of Documents

**Cover Memo**

**Draft Minor NSR Permit**

**Draft Permit Engineering Analysis**

**Attachment 1**

July 10, 1998 NOx Consent Agreement

**Attachment 2**

June 5, 2000 VOC RACT Permit

**Attachment 3**

February 28, 2003 Acid Rain Permit

**Attachment 4**

September 29, 2000 NOx SIP Call Permit

**Attachment 5**

- A. Major NSR Permit Applicability
- B. Future Actual Emissions

**Attachment 6**

- A. Actual Emission Summary (2000-2005) and Chart
- B. 2004-2005 Past Actual Emissions
- C. 2003-2004 Past Actual Emissions
- D. 2002-2003 Past Actual Emissions
- E. 2001-2002 Past Actual Emissions
- F. 2000-2001 Past Actual Emissions
- G. Facility Wide Past Actual Year Comparison

**Attachment 7**

- A. 2002-2003 Baseline Calculations
- B. LNB and SOFA Control Efficiencies

**Attachment 8**

Future Potential Emissions for Minor NSR Applicability

**Attachment 9**

Minor NSR Permit Applicability Calculations

**Attachment 10**

BACT Applicability Calculations



NVRO-039-03

COMMONWEALTH of VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.  
Secretary of Natural Resources

Northern Virginia Regional Office  
13901 Crown Court  
Woodbridge, VA 22193-1453  
(703) 583-3800 fax (703) 583-3801  
www.deq.state.va.us

Robert G. Burnley  
Director

Jeffery A. Steers  
Regional Director

February 28, 2003

Mr. Wesley McNealy  
Director Environmental, Safety & Health  
Mirant Mid-Atlantic, LLC  
901 F Street NW  
Washington, DC 20004

Registration Number: 70228

Dear Mr. McNealy:

Attached is a Phase-II Acid Rain permit for the Potomac River Station at Alexandria. The attached permit supersedes your permit issued December 18, 1997, and amended December 15, 1998, which was due to expire on December 31, 2002.

This permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and civil penalty. Please read all permit conditions carefully.

In the course of evaluating the application for your Phase-II Acid Rain permit renewal and arriving at a final decision to approve the application, the Department of Environmental Quality (DEQ) deemed the application complete on August 30, 2001. Written public comments were solicited by placing a newspaper advertisement in the Northern Virginia Journal on January 9, 2003. The required public comment period, provided by 9 VAC 5-80-670, expired on February 8, 2003.

This approval shall not relieve Mirant of the responsibility to comply with all other local, state, and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provides that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-180 provides that you may request direct consideration of the decision by the

Mr. Wesley McNealy  
February 28, 2003  
Page 2

Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

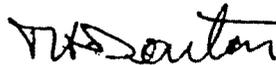
As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision (the date you actually received this decision or the date on which it was mailed to you, whichever occurred first), within which to initiate an appeal of this decision by filing a Notice of Appeal with:

Robert G. Burnley, Director  
Department of Environmental Quality  
P. O. Box 10009  
Richmond, VA 23240-0009

In the event that this decision is served on you by mail, three days are added to the period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit or any other please feel free to phone the regional office at (703) 583-3800 or John McKie at (703) 583-3831.

Sincerely,



Terry H. Darton  
Regional Air Permit Manager

TDH/JRM/03039TIV

Attachment: Phase-II Acid Rain Permit

Cc: Director, OAPP (electronic file submission)  
Chief, Air Enforcement Branch (3AP13), U.S. EPA, Region III  
Chief, Permits and Technical Assistance Branch (3AP11), U.S. EPA, Region III



COMMONWEALTH of VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.  
Secretary of Natural Resources

Northern Virginia Regional Office  
13901 Crown Court  
Woodbridge, VA 22193-1453  
(703) 583-3800 fax (703) 583-3801  
www.deq.state.va.us

Robert G. Burnley  
Director

Jeffery A. Steers  
Regional Director

**PHASE II ACID RAIN PERMIT**

This permit supersedes your Phase II Acid Rain permit approved on December 18, 1997 and amended on December 15, 1998.

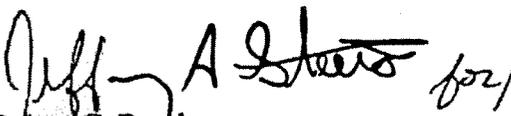
Issued to: Potomac River Station  
Operated by: Mirant Potomac River, LLC  
Location: Alexandria  
Registration No.: 70228  
AFS ID No.: 51-510-0003  
ORIS code: 3788  
Effective: January 1, 2003  
Expires: December 31, 2007

**Acid Rain Permit Contents**

1. Statement of Basis.
2. SO<sub>2</sub> allowances allocated under this permit and NO<sub>x</sub> requirements for each affected unit.
3. Additional requirements or conditions, and any comments, notes and justifications regarding permit decisions and changes made to the permit application forms during the review process.
4. The permit application submitted for this source including the attached NO<sub>x</sub> compliance plan (6 pages).

**Permit Approval**

Approved on: February 28, 2003

  
Robert G. Burnley  
Director

Permit consists of a total of 11 pages, including the attached permit application and the attached NO<sub>x</sub> compliance plan.

1. Statement of Basis. (9 VAC 5-80-490 B.2)

Statutory and Regulatory Authorities: In accordance with the Air Pollution Control Law of Virginia §10.1-1308 and §10.1-1322, the Environmental Protection Agency (EPA) Final Full Approval of the Operating Permits Program (Titles IV and V) published in the Federal Register December 4, 2001, Volume 66, Number 233, Rules and Regulations, Pages 62961-62967 and effective November 30, 2001, and Title 40, the Code of Federal Regulations §§72.1 through 76.16, the Commonwealth of Virginia Department of Environmental Quality issues this permit pursuant to 9 VAC 5 Chapter 80, Article 3 of the Virginia Regulations for the Control and Abatement of Air Pollution (Acid Rain Operating Permits).

2. SO<sub>2</sub> Allowance Allocations and NO<sub>x</sub> Requirements for affected units. (9 VAC 5-80-490 A.4)

		2003	2004	2005	2006	2007
Unit 1	SO <sub>2</sub> allowances, under Table 2, 40 CFR Part 73. (tons)	2333 (See 3.B.1)	2333 (See 3.B.1)	2333 (See 3.B.1)	2333 (See 3.B.1)	2333 (See 3.B.1)
	NO <sub>x</sub> limit (See 3.C.1)	<p>Pursuant to 40 CFR 76.8(d)(2), the Commonwealth of Virginia Department of Environmental Quality approves a NO<sub>x</sub> early election compliance plan for unit 1. The compliance plan is effective for calendar year 2003 through calendar year 2007. Under the compliance plan, this unit's annual average NO<sub>x</sub> emission rate for each year, determined in accordance 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5 (a)(1), of 0.45 lb/mmBtu of heat input for tangentially fired boilers. If this unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject the applicable emission limitation under 40 CFR §76.7(a)(1) of 0.40 lb/mmBtu for tangentially fired boilers until calendar year 2008.</p> <p>In addition to the described compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO<sub>x</sub> compliance plan and requirements covering excess emissions.</p>				

		2003	2004	2005	2006	2007
Unit 2	SO <sub>2</sub> allowances, under Table 2, 40 CFR Part 73. (tons)	2308 (See 3.B.1)	2308 (See 3.B.1)	2308 (See 3.B.1)	2308 (See 3.B.1)	2308 (See 3.B.1)
	NO <sub>x</sub> limit (See 3.C.1)	<p>Pursuant to 40 CFR 76.8(d)(2), the Commonwealth of Virginia Department of Environmental Quality approves a NO<sub>x</sub> early election compliance plan for unit 2. The compliance plan is effective for calendar year 2003 through calendar year 2007. Under the compliance plan, this unit's annual average NO<sub>x</sub> emission rate for each year, determined in accordance 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5 (a)(1), of 0.45 lb/mmBtu of heat input for tangentially fired boilers. If this unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject the applicable emission limitation under 40 CFR §76.7(a)(1) of 0.40 lb/mmBtu for tangentially fired boilers until calendar year 2008.</p> <p>In addition to the described compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO<sub>x</sub> compliance plan and requirements covering excess emissions.</p>				

		2003	2004	2005	2006	2007
Unit 3	SO <sub>2</sub> allowances, under Table 2, 40 CFR Part 73. (tons)	2755 (See 3.B.1)	2755 (See 3.B.1)	2755 (See 3.B.1)	2755 (See 3.B.1)	2755 (See 3.B.1)
	NO <sub>x</sub> limit (See 3.C.1)	<p>Pursuant to 40 CFR 76.8(d)(2), the Commonwealth of Virginia Department of Environmental Quality approves a NO<sub>x</sub> early election compliance plan for unit 3. The compliance plan is effective for calendar year 2003 through calendar year 2007. Under the compliance plan, this unit's annual average NO<sub>x</sub> emission rate for each year, determined in accordance 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5 (a)(1), of 0.45 lb/mmBtu of heat input for tangentially fired boilers. If this unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject the applicable emission limitation under 40 CFR §76.7(a)(1) of 0.40 lb/mmBtu for tangentially fired boilers until calendar year 2008.</p> <p>In addition to the described compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO<sub>x</sub> compliance plan and requirements covering excess emissions.</p>				

		2003	2004	2005	2006	2007
Unit 4	SO <sub>2</sub> allowances, under Table 2, 40 CFR Part 73. (tons)	3036 (See 3.B.1)	3036 (See 3.B.1)	3036 (See 3.B.1)	3036 (See 3.B.1)	3036 (See 3.B.1)
	NO <sub>x</sub> limit (See 3.C.1)	<p>Pursuant to 40 CFR 76.8(d)(2), the Commonwealth of Virginia Department of Environmental Quality approves a NO<sub>x</sub> early election compliance plan for unit 4. The compliance plan is effective for calendar year 2003 through calendar year 2007. Under the compliance plan, this unit's annual average NO<sub>x</sub> emission rate for each year, determined in accordance 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5 (a)(1), of 0.45 lb/mmBtu of heat input for tangentially fired boilers. If this unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject the applicable emission limitation under 40 CFR §76.7(a)(1) of 0.40 lb/mmBtu for tangentially fired boilers until calendar year 2008.</p> <p>In addition to the described compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO<sub>x</sub> compliance plan and requirements covering excess emissions.</p>				

		2003	2004	2005	2006	2007
Unit 5	SO <sub>2</sub> allowances, under Table 2, 40 CFR Part 73. (tons)	2912 (See 3.B.1)	2912 (See 3.B.1)	2912 (See 3.B.1)	2912 (See 3.B.1)	2912 (See 3.B.1)
	NO <sub>x</sub> limit (See 3.C.1)	<p>Pursuant to 40 CFR 76.8(d)(2), the Commonwealth of Virginia Department of Environmental Quality approves a NO<sub>x</sub> early election compliance plan for unit 5. The compliance plan is effective for calendar year 2003 through calendar year 2007. Under the compliance plan, this unit's annual average NO<sub>x</sub> emission rate for each year, determined in accordance 40 CFR Part 75, shall not exceed the applicable emission limitation, under 40 CFR 76.5 (a)(1), of 0.45 lb/mmBtu of heat input for tangentially fired boilers. If this unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject the applicable emission limitation under 40 CFR §76.7(a)(1) of 0.40 lb/mmBtu for tangentially fired boilers until calendar year 2008.</p> <p>In addition to the described compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO<sub>x</sub> compliance plan and requirements covering excess emissions.</p>				

3. **Additional Requirements, Notes, and Comments.**

A. **Additional Requirements:**

- (1) Mirant Potomac River, LLC, shall submit a complete permit application that includes all of the information required under 40 CFR §§72.21 and 72.31 and includes a complete NO<sub>x</sub> compliance plan in accordance with 40 CFR §76.9(c) at least 6 months, but no earlier than 18 months, prior to the date of expiration of the existing Phase II Acid Rain permit. EPA forms shall be used.  
(9 VAC 5-80-430 C.5)

B. **Notes**

- (1) SO<sub>2</sub> allowances may be acquired from other sources in addition to those allocated by U.S. EPA. No revision to this permit is necessary in order for the owners and operators of this unit to hold additional allowances recorded in accordance with 40 CFR Part 73. The owners and operators of this unit remain obligated to hold sufficient allowances to account for SO<sub>2</sub> emissions from this unit in accordance with 40 CFR 72.9(c)(1).  
(9 VAC 5-80-420 C.1 and H.1 and 9 VAC 5-80-490 O)

C. **Comments:**

- (1) For purposes of the Acid Rain program, Mirant Potomac River may include units 1, 2, 3, 4 or 5 in a NO<sub>x</sub> averaging plan only if the applicable emission limitation under 40 CFR 76.5 (a)(1), of 0.45 lb/mmBtu of heat input for tangentially fired boilers is used for this unit in determining compliance with such a plan.  
(9 VAC 5-80-420 D)

4. **Phase II Acid Rain Permit Application.** The attached permit application is incorporated into the Phase II Acid Rain permit by reference, including the attached NO<sub>x</sub> Compliance Plan. The owners and operators of the source shall comply with the standard requirements and special provisions set forth in the application.  
(9 VAC 5-80-490 A.4.a)



Potomac River
---------------

Plant Name (from Step 1)

**Permit Requirements****STEP 3**

Read the standard requirements

- (1) The designated representative of each affected source and each affected unit at the source shall:
- (i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and
  - (ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;
- (2) The owners and operators of each affected source and each affected unit at the source shall:
- (i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and
  - (ii) Have an Acid Rain Permit.

**Monitoring Requirements**

- (1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.
- (2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
- (3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

**Sulfur Dioxide Requirements**

- (1) The owners and operators of each source and each affected unit at the source shall:
- (i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)), or in the compliance subaccount of another affected unit at the same source to the extent provided in 40 CFR 73.35(b)(3), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and
  - (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.
- (2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.
- (3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
- (i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
  - (ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).
- (4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
- (5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
- (6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

STEP 3,  
Cont'd.

**Nitrogen Oxides Requirements** The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

**Excess Emissions Requirements**

- (1) The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
- (2) The owners and operators of an affected unit that has excess emissions in any calendar year shall:
  - (i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
  - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

**Recordkeeping and Reporting Requirements**

- (1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
  - (i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
  - (ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
  - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
  - (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
- (2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

**Liability**

- (1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
- (2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
- (3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
- (4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.

Plant Name (from Step 1) <b>Potomac River</b>
---

Step 3,  
Cont'd.

**Liability, Cont'd**

- (5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
- (6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR 72.44 (Phase II repowering extension plans) and 40 CFR 76.11 (NO<sub>x</sub> averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR part 75 (including 40 CFR 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative.
- (7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

**Effect on Other Authorities**

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:

- (1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;
- (2) Limiting the number of allowances a unit can hold; *provided*, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act;
- (3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
- (4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
- (5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

**STEP 4**

**Certification**

Read the certification statement, sign, and date

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name <b>Wesley McNealy</b>	
Signature <i>Wesley McNealy</i>	Date <b>6.21.02</b>



# Phase II NO<sub>x</sub> Compliance Plan

For more information, see instructions and refer to 40 CFR 76.9

This submission is:  New  Revised  Renewal

**STEP 1**  
Indicate plant name, State, and ORIS code from NADB, if applicable

Plant Name	Potomac River	VA	3788
		State	ORIS Code

**STEP 2**

Identify each affected Group 1 and Group 2 boiler using the boiler ID# from NADB, if applicable. Indicate boiler type: "CB" for cell burner, "CY" for cyclone, "DBW" for dry bottom wall-fired, "T" for tangentially fired, "V" for vertically fired, and "WB" for wet bottom. Indicate the compliance option selected for each unit.

ID#	1	ID#	2	ID#	3	ID#	4	ID#	5	ID#	
Type	T	Type									

(a) Standard annual average emission limitation of 0.50 lb/mmBtu (for Phase I dry bottom wall-fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(b) Standard annual average emission limitation of 0.45 lb/mmBtu (for Phase I tangentially fired boilers)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(c) EPA-approved early election plan under 40 CFR 76.8 through 12/31/07 (also indicate above emission limit specified in plan)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(d) Standard annual average emission limitation of 0.45 lb/mmBtu (for Phase II dry bottom wall-fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(e) Standard annual average emission limitation of 0.40 lb/mmBtu (for Phase II tangentially fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(f) Standard annual average emission limitation of 0.68 lb/mmBtu (for cell burner boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(g) Standard annual average emission limitation of 0.86 lb/mmBtu (for cyclone boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(h) Standard annual average emission limitation of 0.80 lb/mmBtu (for vertically fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(i) Standard annual average emission limitation of 0.84 lb/mmBtu (for wet bottom boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(j) NO <sub>x</sub> Averaging Plan (Include NO <sub>x</sub> Averaging form)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(k) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(A) (check the standard emission limitation box above for most stringent limitation applicable to any unit utilizing stack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
(l) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(B) with NO <sub>x</sub> Averaging (check the NO <sub>x</sub> Averaging Plan box and include NO <sub>x</sub> Averaging form)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								

Plant Name (from Step 1) <b>Potomac River</b>
---

**STEP 2, cont'd.**

ID# 1	ID# 2	ID# 3	ID# 4	ID# 5	ID#
Type T	Type				

(m) EPA-approved common stack apportionment method pursuant to 40 CFR 75.17 (a)(2)(i)(C), (a)(2)(iii)(B), or (b)(2)

<input type="checkbox"/>					
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(n) AEL (include Phase II AEL Demonstration Period, Final AEL Petition, or AEL Renewal form as appropriate)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(o) Petition for AEL demonstration period or final AEL under review by U.S. EPA or demonstration period ongoing

<input type="checkbox"/>					
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(p) Repowering extension plan approved or under review

<input type="checkbox"/>					
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**STEP 3**  
Read the standard requirements and certification, enter the name of the designated representative, sign &

**Standard Requirements**

General. This source is subject to the standard requirements in 40 CFR 72.9 (consistent with 40 CFR 76.8(a)(1)(i)). These requirements are listed in this source's Acid Rain Permit.

**Special Provisions for Early Election Units**

Nitrogen Oxides. A unit that is governed by an approved early election plan shall be subject to an emissions limitation for NO<sub>x</sub> as provided under 40 CFR 76.8(a)(2) except as provided under 40 CFR 76.8(e)(3)(ii).

Liability. The owners and operators of a unit governed by an approved early election plan shall be liable for any violation of the plan or 40 CFR 76.8 at that unit. The owners and operators shall be liable, beginning January 1, 2000, for fulfilling the obligations specified in 40 CFR Part 77.

Termination. An approved early election plan shall be in effect only until the earlier of January 1, 2008 or January 1 of the calendar year for which a termination of the plan takes effect. If the designated representative of the unit under an approved early election plan fails to demonstrate compliance with the applicable emissions limitation under 40 CFR 76.5 for any year during the period beginning January 1 of the first year the early election takes effect and ending December 31, 2007, the permitting authority will terminate the plan. The termination will take effect beginning January 1 of the year after the year for which there is a failure to demonstrate compliance, and the designated representative may not submit a new early election plan. The designated representative of the unit under an approved early election plan may terminate the plan any year prior to 2008 but may not submit a new early election plan. In order to terminate the plan, the designated representative must submit a notice under 40 CFR 72.40(d) by January 1 of the year for which the termination is to take effect. If an early election plan is terminated any year prior to 2000, the unit shall meet, beginning January 1, 2000, the applicable emissions limitation for NO<sub>x</sub> for Phase II units with Group 1 boilers under 40 CFR 76.7. If an early election plan is terminated on or after 2000, the unit shall meet, beginning on the effective date of the termination, the applicable emissions limitation for NO<sub>x</sub> for Phase II units with Group 1 boilers under 40 CFR 76.7.

**Certification**

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name <b>Wesley McNealy</b>	
Signature	Date <b>6.21.02</b>

# Attachment 5A

## Major NSR Permit Applicability

Facility name: Mirant  
Air Reg #: 70228

	C1			C2			C3			C4			C5			Total NEI (tpy)	PSD/NA Sig. Level (tpy)	Major NSR?
	PA	FA	NEI	PA	FA	NEI												
PM	67.10	67.1	0.0	70.65	70.7	0.0	147.95	148.0	0.0	105.05	105.1	0.0	158.60	158.6	0.0	0.0	25.0	No
PM10	67.10	67.1	0.0	70.65	70.7	0.0	147.95	148.0	0.0	105.05	105.1	0.0	158.60	158.6	0.0	0	15.0	No
PM 2.5	67.10	67.1	0.0	70.65	70.7	0.0	147.95	148.0	0.0	105.05	105.1	0	158.6	158.6	0	0	15.0	No
SO2	2368.15	2368.2	0.0	2320.9	2320.9	0.0	3572.55	3572.6	0.0	3611	3611.0	0	3756.6	3756.6	0	0	40.0	No
NOx	798.14	798.1	0.0	719.40	719.4	0.0	755.08	755.1	0.0	849.88	849.8	0	852.77	852.8	0	0	40.0	No
CO	38.5355	38.5	0.0	40.6475	40.6	0.0	54.934	54.9	0.0	55.8335	55.8	0	59.337	59.3	0.00	0.00	100.0	No
VOC	5.4035	5.4	0.0	5.7255	5.7	0.0	7.6925	7.7	0.0	7.931	7.9	0	8.319	8.3	0.00	0.00	40.0	No
Pb	0.035	0.035	0	0.035	0.035	0	0.045	0.045	0	0.05	0.05	0	0.05	0.05	0	0	0.6	No

Mirant requested the use of emissions data from 2002-2003 as the baseline actual emissions.

Mirant has proposed allowable permitted emissions limits equal to past actual emission rates.

NEI = Future Actual Emissions - Past Actual Emissions

NEI = NEIC1+ NEIC2+NEIC3+NEIC4+NEIC5

\*\*\*NOx emissions are limited to 3700 tpy for the plant in the NOx SIP Call Consent Decree.

Attachment 5B

Future Actual Emissions (tpy)

Facility name: Mirant  
Air Reg #: 70228

	C1	C2	C3	C4	C5	Total
PM	67.10	70.65	147.95	105.05	158.60	549.35
PM10	67.10	70.65	147.95	105.05	158.6	549.35
PM 2.5	67.10	70.65	147.95	105.05	158.6	549.35
SO2	2368.15	2320.9	3572.55	3611	3756.6	15629.2
NOx**	798.14	719.40	755.08	849.88	852.77	**3700
CO	38.5355	40.6475	54.934	55.8335	59.337	249.288
VOC	5.4035	5.7255	7.6925	7.931	8.319	35.0715
Pb	0.035	0.035	0.045	0.05	0.05	0.215

\*\*\*Facilitywide NOx emissions for PRGS is limited to 3700 tpy in the NOx SIP Call Consent Decree.

Attachment 6A

Actual Emissions (tpy)

2005

	C1	C2	C3	C4	C5
PM	53.3	40.52	44.15	40.72	44.12
PM10	53.3	40.52	44.15	40.72	44.12
PM2.5	15.462	11.752	12.804	11.814	12.794
SOx	2057.8	1557.4	1648.1	1490.4	1725
NOx	757.3	464.5	417.5	436.6	441.3
CO	36.295	27.326	29.614	27.346	29.663
VOC	4.385	3.296	3.559	3.29	3.568
Pb	0.03	0.023	0.025	0.023	0.025

2002

	C1	C2	C3	C4	C5
PM	58.4	63.4	157.6	56.2	157.3
PM10	58.4	63.4	157.6	56.2	157.3
PM2.5	58.4	63.4	157.6	56.2	157.3
SOx	2149.7	2096	4079.1	3838.3	3956.7
NOx	737.1	756.6	1463.6	1380.2	1388.3
CO	33.413	36.146	58.013	55.871	58.326
VOC	4.691	5.072	8.123	7.824	8.176
Pb	0.03	0.03	0.05	0.05	0.05

2004

	C1	C2	C3	C4	C5
PM	57.7	62.7	132.8	142.9	132.3
PM10	57.7	62.7	132.8	142.9	132.3
PM2.5	26.09	28.3	59.2	63.7	59
SOx	1840.3	2056.2	3848.7	3267.1	2934.2
NOx	702.5	717.8	1042.2	1196.3	1082.8
CO	33.965	36.87	50.641	54.435	50.355
VOC	4.102	4.449	6.086	6.539	6.048
Pb	0.028	0.03	0.042	0.046	0.042

2001

	C1	C2	C3	C4	C5
PM	93.5	108.3	55.5	56.1	55.4
PM10	93.5	108.3	55.5	56.1	55.4
PM2.5	93.5	108.3	55.5	56.1	55.4
SOx	2298	2540.9	3442	3769	3112.3
NOx	863	1013.2	1319	1483.4	1238.9
CO	35.228	40.853	51.658	52.249	51.495
VOC	4.943	5.734	7.233	7.318	7.211
Pb					

2003

	C1	C2	C3	C4	C5
PM	75.8	77.9	138.3	153.9	159.9
PM10	75.8	77.9	138.3	153.9	159.9
PM2.5	75.8	77.9	138.3	153.9	159.9
SOx	2586.6	2545.8	3066	3383.7	3556.5
NOx	943.2	1019.7	1233.1	1234.8	1318.9
CO	43.658	45.149	51.855	55.796	60.348
VOC	6.116	6.379	7.262	8.038	8.462
Pb	0.04	0.04	0.04	0.05	0.05

2000

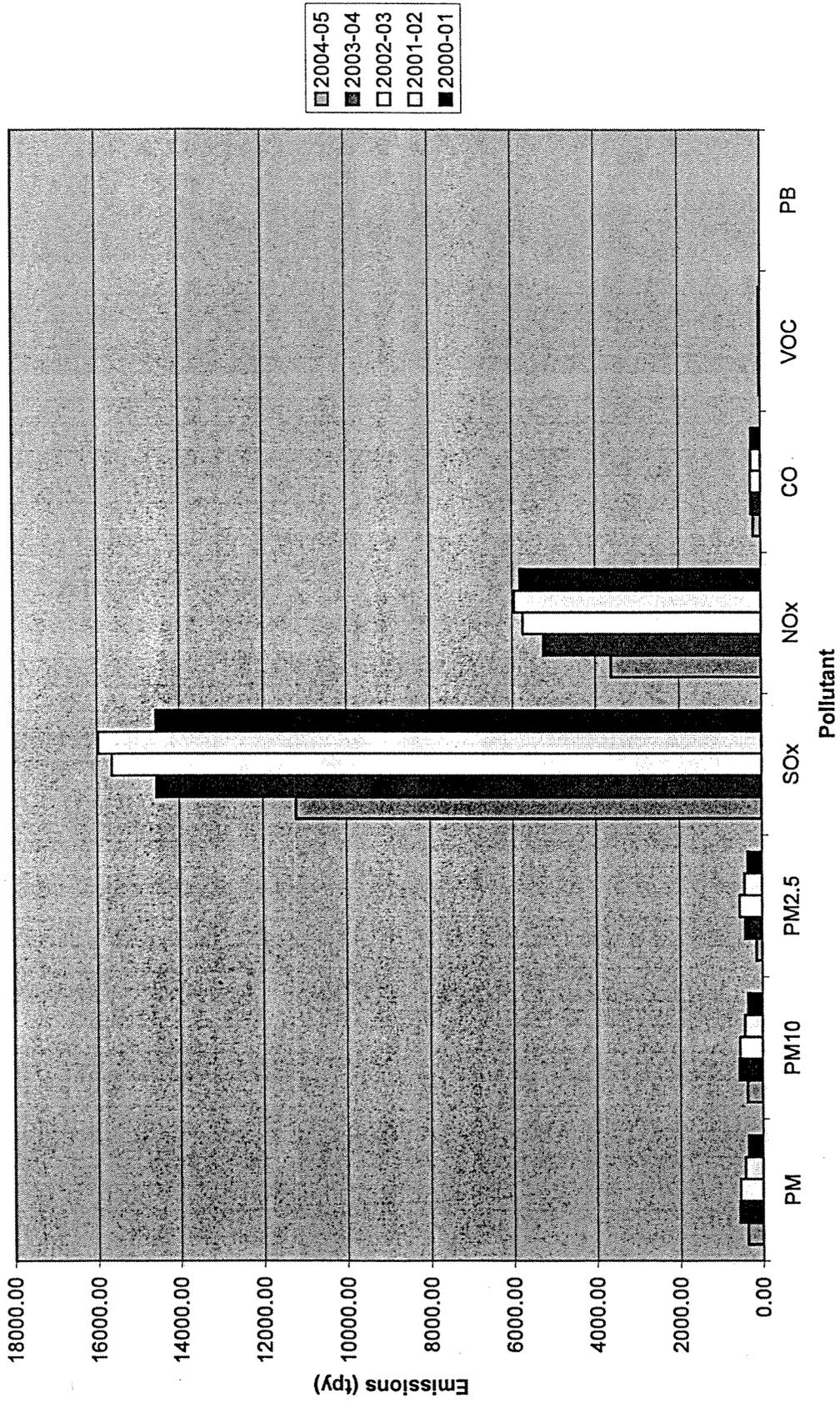
	C1	C2	C3	C4	C5
PM	83.3	92.5	54.6	57.7	59.4
PM10	83.3	92.5	54.6	57.7	59.4
PM2.5	83.3	92.5	54.6	57.7	59.4
SOx	1996.5	2093.4	3250.6	3352.3	3255.1
NOx	832.2	848.5	1304.7	1392.1	1316.1
CO	31.678	35.182	51.4	54.298	55.908
VOC	4.446	4.937	7.197	7.603	7.83
Pb					

\*Data from emission statements certified by the source.

No emissions data was available from PM2.5 for 2000-2003 so it was assumed that PM2.5 Past Actual Emissions equal PM10 Past Actual Emissions.

No emissions data for Pb was reported for 2000-2001.

# PRGS Past Actual Emissions



# Attachement 6B

## 2004-2005 Past Actual Emissions

Facility na Mirant  
Air Reg #: 70228

Boiler # 1 Past actual emissions (coal & oil)			
	2004	2005	average
Pollutant	tons/year	tons/year	tons/year
PM	57.7	53.3	55.50
PM10	57.7	53.3	55.50
PM2.5	26.09	15.462	20.78
SOx	1840.3	2057.8	1949.05
NOx	702.5	757.3	729.90
CO	33.965	36.295	35.13
VOC	4.102	4.385	4.24
Pb	0.028	0.03	0.03

Boiler # 4 Past actual emissions (coal & oil)			
	2004	2005	average
Pollutant	tons/year	tons/year	tons/year
PM	142.90	40.72	91.81
PM10	142.90	40.72	91.81
PM2.5	63.70	11.81	37.757
SOx	3267.10	1490.40	2378.75
NOx	1196.30	436.60	816.45
CO	54.44	27.35	40.89
VOC	6.54	3.29	4.91
Pb	0.05	0.02	0.03

Boiler # 2 Past actual emissions (coal & oil)			
	2004	2005	average
Pollutant	tons/year	tons/year	tons/year
PM	62.70	40.52	51.61
PM10	62.70	40.52	51.61
PM2.5	28.30	11.752	20.03
SOx	2056.20	1557.4	1806.80
NOx	717.80	464.5	591.15
CO	36.87	27.326	32.10
VOC	4.45	3.296	3.87
Pb	0.03	0.023	0.03

Boiler # 5 Past actual emissions (coal & oil)			
	2004	2005	average
Pollutant	tons/year	tons/year	tons/year
PM	132.30	44.12	88.21
PM10	132.30	44.12	88.21
PM2.5	59.00	12.79	35.90
SOx	2934.20	1725.00	2329.60
NOx	1082.80	441.30	762.05
CO	50.36	29.66	40.01
VOC	6.05	3.57	4.81
Pb	0.04	0.03	0.03

Boiler # 3 Past actual emissions (coal & oil)			
	2004	2005	average
Pollutant	tons/year	tons/year	tons/year
PM	132.80	44.15	88.48
PM10	132.80	44.15	88.48
PM2.5	59.20	12.80	36.00
SOx	3848.70	1648.10	2748.40
NOx	1042.20	417.50	729.85
CO	50.64	29.61	40.13
VOC	6.09	3.56	4.82
Pb	0.04	0.03	0.03

TOTAL (all 5 boilers) Past actual emissions (coal & oil)			
	2004	2005	average
Pollutant	tons/year	tons/year	tons/year
PM	528.40	222.81	375.61
PM10	528.40	222.81	375.61
PM2.5	236.29	64.63	150.46
SOx	13946.50	8478.70	11212.60
NOx	4741.60	2517.20	3629.40
CO	226.27	150.24	188.26
VOC	27.22	18.10	22.66
Pb	0.19	0.13	0.16

## Attachement 6C

### 2003-2004 Past Actual Emissions

Facility name: Mirant  
Air Reg #: 70228

Boiler # 1 Past actual emissions (coal & oil)			
	2003	2004	average
Pollutant	tons/year	tons/year	tons/year
PM	75.8	57.7	66.75
PM10	75.8	57.7	66.75
PM2.5	75.8	26.09	50.95
SOx	2586.6	1840.3	2213.45
NOx	943.2	702.5	822.85
CO	43.658	33.965	38.81
VOC	6.116	4.102	5.11
Pb	0.04	0.028	0.03

Boiler # 4 Past actual emissions (coal & oil)			
	2003	2004	average
Pollutant	tons/year	tons/year	tons/year
PM	153.90	142.90	148.4
PM10	153.90	142.90	148.4
PM2.5	153.90	63.70	108.8
SOx	3383.70	3267.10	3325.4
NOx	1234.80	1196.30	1215.55
CO	55.80	54.44	55.12
VOC	8.04	6.54	7.29
Pb	0.05	0.05	0.05

Boiler # 2 Past actual emissions (coal & oil)			
	2003	2004	average
Pollutant	tons/year	tons/year	tons/year
PM	77.9	62.70	70.30
PM10	77.9	62.70	70.30
PM2.5	77.9	28.30	53.10
SOx	2545.8	2056.20	2301.00
NOx	1019.7	717.80	868.75
CO	45.149	36.87	41.01
VOC	6.379	4.45	5.41
Pb	0.04	0.03	0.04

Boiler # 5 Past actual emissions (coal & oil)			
	2003	2004	average
Pollutant	tons/year	tons/year	tons/year
PM	159.90	132.30	146.10
PM10	159.90	132.30	146.10
PM2.5	159.90	59.00	109.45
SOx	3556.50	2934.20	3245.35
NOx	1318.90	1082.80	1200.85
CO	60.35	50.36	55.35
VOC	8.46	6.05	7.26
Pb	0.05	0.04	0.05

Boiler # 3 Past actual emissions (coal & oil)			
	2003	2004	average
Pollutant	tons/year	tons/year	tons/year
PM	138.3	132.80	135.55
PM10	138.3	132.80	135.55
PM2.5	138.3	59.20	98.75
SOx	3066	3848.70	3457.35
NOx	1233.1	1042.20	1137.65
CO	51.855	50.64	51.25
VOC	7.262	6.09	6.67
Pb	0.04	0.04	0.04

TOTAL (all 5 boilers) Past actual emissions (coal & oil)			
	2003	2004	average
Pollutant	tons/year	tons/year	tons/year
PM	605.80	528.40	567.10
PM10	605.80	528.40	567.10
PM2.5	605.80	236.29	421.05
SOx	15138.60	13946.50	14542.55
NOx	5749.70	4741.60	5245.65
CO	256.81	226.27	241.54
VOC	36.26	27.22	31.74
Pb	0.22	0.19	0.20

No emissions data was available from PM2.5 for 2003 so it was assumed that PM2.5 Past Actual Emissions equal PM10 Past Actual Emissions.

# Attachement 6D

## 2002-2003 Past Actual Emissions

Facility name: Mirant  
Air Reg #: 70228

Boiler # 1 Past actual emissions (coal & oil)			
	2002	2003	average
Pollutant	tons/year	tons/year	tons/year
PM	58.4	75.8	67.10
PM10	58.4	75.8	67.10
PM2.5	58.4	75.8	67.10
SOx	2149.7	2586.6	2368.15
NOx	737.1	943.2	840.15
CO	33.413	43.658	38.54
VOC	4.691	6.116	5.40
Pb	0.03	0.04	0.04

Boiler # 4 Past actual emissions (coal & oil)			
	2002	2003	average
Pollutant	tons/year	tons/year	tons/year
PM	56.20	153.90	105.05
PM10	56.20	153.90	105.05
PM2.5	56.20	153.90	105.05
SOx	3838.30	3383.70	3611
NOx	1380.20	1234.80	1307.5
CO	55.87	55.80	55.83
VOC	7.82	8.04	7.93
Pb	0.05	0.05	0.05

Boiler # 2 Past actual emissions (coal & oil)			
	2002	2003	average
Pollutant	tons/year	tons/year	tons/year
PM	63.4	77.90	70.65
PM10	63.4	77.90	70.65
PM2.5	63.4	77.90	70.65
SOx	2096	2545.80	2320.90
NOx	756.6	1019.70	888.15
CO	36.146	45.15	40.65
VOC	5.072	6.38	5.73
Pb	0.03	0.04	0.04

Boiler # 5 Past actual emissions (coal & oil)			
	2002	2003	average
Pollutant	tons/year	tons/year	tons/year
PM	157.30	159.90	158.60
PM10	157.30	159.90	158.60
PM2.5	157.30	159.90	158.60
SOx	3956.70	3556.50	3756.60
NOx	1388.30	1318.90	1353.60
CO	58.33	60.35	59.34
VOC	8.18	8.46	8.32
Pb	0.05	0.05	0.05

Boiler # 3 Past actual emissions (coal & oil)			
	2002	2003	average
Pollutant	tons/year	tons/year	tons/year
PM	157.6	138.30	147.95
PM10	157.6	138.30	147.95
PM2.5	157.6	138.30	147.95
SOx	4079.1	3066.00	3572.55
NOx	1463.6	1233.10	1348.35
CO	58.013	51.86	54.93
VOC	8.123	7.26	7.69
Pb	0.05	0.04	0.05

TOTAL (all 5 boilers) Past actual emissions (coal & oil)			
	2002	2003	average
Pollutant	tons/year	tons/year	tons/year
PM	492.90	605.80	549.35
PM10	492.90	605.80	549.35
PM2.5	492.90	605.80	549.35
SOx	16119.80	15138.60	15629.20
NOx	5725.80	5749.70	5737.75
CO	241.77	256.81	249.29
VOC	33.89	36.26	35.07
Pb	0.21	0.22	0.22

No emissions data was available from PM2.5 for 2002 and 2003 so it was assumed that PM2.5 Past Actual Emissions equal PM10 Past Actual Emissions.

# Attachement 6E

## 2001-2002 Past Actual Emissions

Facility name: Mirant  
Air Reg #: 70228

Boiler # 1 Past actual emissions (coal & oil)			
	2001	2002	average
Pollutant	tons/year	tons/year	tons/year
PM	93.5	58.4	75.95
PM10	93.5	58.4	75.95
PM2.5	93.5	58.4	75.95
SOx	2298	2149.7	2223.85
NOx	863	737.1	800.05
CO	35.228	33.413	34.32
VOC	4.943	4.691	4.82
Pb		0.03	0.03

Boiler # 4 Past actual emissions (coal & oil)			
	2001	2002	average
Pollutant	tons/year	tons/year	tons/year
PM	56.10	56.20	56.15
PM10	56.10	56.20	56.15
PM2.5	56.10	56.20	56.15
SOx	3769.00	3838.30	3803.65
NOx	1483.40	1380.20	1431.8
CO	52.25	55.87	54.06
VOC	7.32	7.82	7.57
Pb		0.05	0.05

Boiler # 2 Past actual emissions (coal & oil)			
	2001	2002	average
Pollutant	tons/year	tons/year	tons/year
PM	108.3	63.40	85.85
PM10	108.3	63.40	85.85
PM2.5	108.3	63.40	85.85
SOx	2540.9	2096.00	2318.45
NOx	1013.2	756.60	884.90
CO	40.853	36.15	38.50
VOC	5.734	5.07	5.40
Pb		0.03	0.03

Boiler # 5 Past actual emissions (coal & oil)			
	2001	2002	average
Pollutant	tons/year	tons/year	tons/year
PM	56.10	157.30	106.70
PM10	56.10	157.30	106.70
PM2.5	56.10	157.30	106.70
SOx	3769.00	3956.70	3862.85
NOx	1483.40	1388.30	1435.85
CO	52.25	58.33	55.29
VOC	7.32	8.18	7.75
Pb		0.05	0.05

Boiler # 3 Past actual emissions (coal & oil)			
	2001	2002	average
Pollutant	tons/year	tons/year	tons/year
PM	55.5	157.60	106.55
PM10	55.5	157.60	106.55
PM2.5	55.5	157.60	106.55
SOx	3442	4079.10	3760.55
NOx	1319	1463.60	1391.30
CO	51.658	58.01	54.84
VOC	7.233	8.12	7.68
Pb		0.05	0.05

TOTAL (all 5 boilers) Past actual emissions (coal & oil)			
	2001	2002	average
Pollutant	tons/year	tons/year	tons/year
PM	369.50	492.90	431.20
PM10	369.50	492.90	431.20
PM2.5	369.50	492.90	431.20
SOx	15818.90	16119.80	15969.35
NOx	6162.00	5725.80	5943.90
CO	232.24	241.77	237.00
VOC	32.55	33.89	33.22
Pb		0.21	0.21

No emissions data was available from PM2.5 for 2001 and 2002 so it was assumed that PM2.5 Past Actual Emissions equal PM10 Past Actual Emissions.

# Attachement 6F

## 2000-2001 Past Actual Emissions

Facility name: Mirant  
Air Reg #: 70228

Boiler # 1 Past actual emissions (coal & oil)			
	2000	2001	average
Pollutant	tons/year	tons/year	tons/year
PM	83.3	93.5	88.40
PM10	83.3	93.5	88.40
PM2.5	83.3	93.5	88.40
SOx	1996.5	2298	2147.25
NOx	832.2	863	847.60
CO	31.678	35.228	33.45
VOC	4.446	4.943	4.69
Pb			

Boiler # 4 Past actual emissions (coal & oil)			
	2000	2001	average
Pollutant	tons/year	tons/year	tons/year
PM	57.70	56.10	56.9
PM10	57.70	56.10	56.9
PM2.5	57.70	56.10	56.9
SOx	3352.30	3769.00	3560.65
NOx	1392.10	1483.40	1437.75
CO	54.30	52.25	53.27
VOC	7.60	7.32	7.46
Pb			

Boiler # 2 Past actual emissions (coal & oil)			
	2000	2001	average
Pollutant	tons/year	tons/year	tons/year
PM	92.5	108.30	100.40
PM10	92.5	108.30	100.40
PM2.5	92.5	108.30	100.40
SOx	2093.4	2540.90	2317.15
NOx	848.5	1013.20	930.85
CO	35.182	40.85	38.02
VOC	4.937	5.73	5.34
Pb			

Boiler # 5 Past actual emissions (coal & oil)			
	2000	2001	average
Pollutant	tons/year	tons/year	tons/year
PM	59.40	55.40	57.40
PM10	59.40	55.40	57.40
PM2.5	59.40	55.40	57.40
SOx	3255.10	3112.30	3183.70
NOx	1316.10	1238.90	1277.50
CO	55.91	51.50	53.70
VOC	7.83	7.21	7.52
Pb			

Boiler # 3 Past actual emissions (coal & oil)			
	2000	2001	average
Pollutant	tons/year	tons/year	tons/year
PM	54.6	55.50	55.05
PM10	54.6	55.50	55.05
PM2.5	54.6	55.50	55.05
SOx	3250.6	3442.00	3346.30
NOx	1304.7	1319.00	1311.85
CO	51.4	51.66	51.53
VOC	7.197	7.23	7.22
Pb			

TOTAL (all 5 boilers) Past actual emissions (coal & oil)			
	2000	2001	average
Pollutant	tons/year	tons/year	tons/year
PM	347.50	368.80	358.15
PM10	347.50	368.80	358.15
PM2.5	347.50	368.80	358.15
SOx	13947.90	15162.20	14555.05
NOx	5693.60	5917.50	5805.55
CO	228.47	231.48	229.97
VOC	32.01	32.44	32.23
Pb			

No emissions data was available from PM2.5 for 2000 and 2001 so it was assumed that PM2.5 Past Actual Emissions equal PM10 Past Actual Emissions.

## Attachment 6G

### Facility Wide Past Actual Year Comparison

Facility name: Mirant  
Air Reg #: 70228

	2004-05	2003-04	2002-03	2001-02	2000-01
PM	375.61	567.10	549.35	431.20	358.15
PM10	375.61	567.10	549.35	431.20	358.15
PM2.5	150.46	421.05	549.35	431.20	358.15
SOx	11212.60	14542.55	15629.20	15969.35	14555.05
NOx	3629.40	5245.65	5737.75	5943.90	5805.55
CO	188.26	241.54	249.29	237.00	229.97
VOC	22.66	31.74	35.07	33.22	32.23
PB	0	0.204	0.215	0.21	0

No emissions data was available from PM2.5 for 2000-2003 so it was assumed that PM2.5 Past Actual Emissions equal PM10 Past Actual Emissions.

Attachment 7A

2002-2003 Baseline Emissions

Facility name: **Mirant**  
 Air Reg #: **70228**

Boiler # 1 Past actual emissions (coal & oil)		Adjustments
	average	LNB
Pollutant	tons/year	tons/year
PM	67.10	NC
PM10	67.10	NC
PM2.5	67.10	NC
SOx	2368.15	NC
NOx	840.15	798.14
CO	38.54	NC
VOC	5.40	NC
Pb	0.04	NC

Boiler # 4 Past actual emissions (coal & oil)		Adjustments
	average	LNB
Pollutant	tons/year	tons/year
PM	105.05	NC
PM10	105.05	NC
PM2.5	105.05	NC
SOx	3611	NC
NOx	1307.5	849.88
CO	55.83	NC
VOC	7.93	NC
Pb	0.05	NC

Boiler # 2 Past actual emissions (coal & oil)		Adjustments
	average	LNB
Pollutant	tons/year	tons/year
PM	70.65	NC
PM10	70.65	NC
PM2.5	70.65	NC
SOx	2320.90	NC
NOx	888.15	719.40
CO	40.65	NC
VOC	5.73	NC
Pb	0.04	NC

Boiler # 5 Past actual emissions (coal & oil)		Adjustments
	average	LNB
Pollutant	tons/year	tons/year
PM	158.60	NC
PM10	158.60	NC
PM2.5	158.60	NC
SOx	3756.60	NC
NOx	1353.60	852.77
CO	59.34	NC
VOC	8.32	NC
Pb	0.05	NC

Boiler # 3 Past actual emissions (coal & oil)		Adjustments
	average	LNB
Pollutant	tons/year	tons/year
PM	147.95	NC
PM10	147.95	NC
PM2.5	147.95	NC
SOx	3572.55	NC
NOx	1348.35	755.08
CO	54.93	NC
VOC	7.69	NC
Pb	0.05	NC

TOTAL (all 5 boilers) Past actual emissions (coal & oil)		Adjustments
	Past Actual	Fed. Enf. Cond.
Pollutant	tons/year	tons/year
PM	549.35	
PM10	549.35	
PM2.5	549.35	
SOx	15629.20	
NOx	5737.75	3700.00
CO	249.29	
VOC	35.07	
Pb	0.22	

<b>Final Baseline Emissions</b>	
Pollutant	tons/year
PM	549.35
PM10	549.35
PM2.5	549.35
SOx	15629.20
NOx	3700.00
CO	249.29
VOC	35.07
Pb	0.22

NC: NO Change

Mirant was required to install LNB on all units and SOFA on units 3, 4, and 5 as part of the draft NOx Consent Decree in 2004. The past actual emissions have been adjusted based on the efficiency of the control(s) at each

Also based on the NOx Consent Decree, annual emissions of NOx from the facility cannot exceed 3700 tons per year. Since it is part of the consent decree, the 3700 ton per year limit is federally enforceable.

**Attachment 7B  
LNB and SOFA Control Efficiencies**

Facility name: **Mirant**  
Air Reg #: **70228**

Unit Description	Rated Heat Input mmbtu/hr	Fuel Type	High Heat Value Btu/lb	Controls	2002 NOx Emissions tpy	2002 Fuel Thruput CEDS	2002 Rate Pre-Control lbs/mmbtu	2005 NOx Emissions tpy	2005 Fuel Thruput CEDS	2005 Rate Post Control lbs/mmbtu	% Reduction
Boiler C1	970.1	coal oil	12,800	LNB	724.4 12.7	129312 tons burned 434 1000 gal	0.438	750.8 6.5	141530 tons burned 365 1000 gal	0.414	5.30
Boiler C2	970.1	coal oil	12,800	LNB	746.4 10.2	140883 tons burned 370 1000 gal	0.414	459.6 4.9	107217 tons burned 208.7 1000 gal	0.335	19.09
Boiler C3	960.7	coal oil	12,800	LNB & SOFA	1462.8 0.8	231803 tons burned 25 1000 gal	0.493	416.1 1.4	117738 tons burned 71.9 1000 gal	0.276	44.00
Boiler C4	960.7	coal oil	12,800	LNB & SOFA	1378.4 1.8	222925 tons burned 56 1000 gal	0.483	434.2 2.4	108295 tons burned 109 1000 gal	0.313	35.16
Boiler C5	960.7	coal oil	12,800	LNB & SOFA	1377.4 10.9	229833 tons burned 347 1000 gal	0.468	439.1 2.2	117581 tons burned 107 1000 gal	0.292	37.69

Mirant was required to install LNB on all units and SOFA on units 3, 4, and 5 as a result of the NOx Consent Decree.  
LNB were installed in Fall 2004.  
SOFA were installed on 3, 4, and 5 in early 2005.

$$\text{Emission Rate (lb/mmbtu)} = \frac{\text{NOx (tons NOx/yr)} \cdot (2000 \text{ lb/ton}) \cdot 1000000}{\text{Coal Thruput (ton coal/yr)} \cdot (2000 \text{ lbs/ton}) \cdot \text{Heat Value (btu/lb coal)}}$$

$$\% \text{ Reduction} = (1 - \frac{2005 \text{ Rate}}{2002 \text{ Rate}}) \cdot 100$$

**Attachment 8**

**Future Potential Emissions for Minor NSR Permit Applicability (Criteria Pollutants)**

Boiler # 1 potential emissions (coal & oil)				
Nomial Heat Input:	1053	mmbtu/hr		
Pollutant	Emission	EF Units	lbs/hr	tpy
	Factors			
PM <sup>1</sup>	0.051	lb/mmbtu	53.7	652.8
PM10 <sup>2</sup>	0.03417	lb/mmbtu	36.0	437.376
PM2.5 <sup>3</sup>	0.01479	lb/mmbtu	15.6	189.312
SOx <sup>4</sup>	1.52	lb/mmbtu	1600.6	19456
NOx <sup>5</sup>	0.77	lb/mmbtu	810.8	9856
CO <sup>6</sup>	0.5	lb/ton	20.5664	90.0808594
VOC <sup>6</sup>	0.06	lb/ton	2.46797	10.8097031
Pb	4.20E-04	lb/ton	0.01728	0.07566792

Boiler # 4 potential emissions (coal & oil)				
Nomial Heat Input:	1087	mmbtu/hr		
Pollutant	Emission	EF Units	lbs/hr	tpy
	Factors			
PM <sup>1</sup>	0.051	lb/mmbtu	55.4	652.8
PM10 <sup>2</sup>	0.03417	lb/mmbtu	37.1	437.376
PM2.5 <sup>3</sup>	0.01479	lb/mmbtu	16.1	189.312
SOx <sup>4</sup>	1.52	lb/mmbtu	1652.2	19456
NOx <sup>5</sup>	0.86	lb/mmbtu	934.8	11008
CO <sup>6</sup>	0.5	lb/ton	21.23	92.9895
VOC <sup>6</sup>	0.06	lb/ton	2.5477	11.1587
Pb	4.20E-04	lb/ton	0.0178	0.07811

Boiler # 2 potential emissions (coal & oil)				
Nomial Heat Input:	1029	mmbtu/hr		
Pollutant	Emission	EF Units	lbs/hr	tpy
	Factors			
PM <sup>1</sup>	0.051	lb/mmbtu	52.5	652.8
PM10 <sup>2</sup>	0.03417	lb/mmbtu	35.2	437.376
PM2.5 <sup>3</sup>	0.01479	lb/mmbtu	15.2	189.312
SOx <sup>4</sup>	1.52	lb/mmbtu	1564.1	19456
NOx <sup>5</sup>	0.77	lb/mmbtu	792.3	9856
CO <sup>6</sup>	0.5	lb/ton	20.0977	88.0277344
VOC <sup>6</sup>	0.06	lb/ton	2.41172	10.5633281
Pb	4.20E-04	lb/ton	0.01688	0.0739433

Boiler # 5 potential emissions (coal & oil)				
Nomial Heat Input:	1107	mmbtu/hr		
Pollutant	Emission	EF Units	lbs/hr	tpy
	Factors			
PM <sup>1</sup>	0.051	lb/mmbtu	56.5	652.8
PM10 <sup>2</sup>	0.03417	lb/mmbtu	37.8	437.376
PM2.5 <sup>3</sup>	0.01479	lb/mmbtu	16.4	189.312
SOx <sup>4</sup>	1.52	lb/mmbtu	1682.6	19456
NOx <sup>5</sup>	0.86	lb/mmbtu	952.0	11008
CO <sup>6</sup>	0.5	lb/ton	21.621	94.7004
VOC <sup>6</sup>	0.06	lb/ton	2.5945	11.364
Pb	4.20E-04	lb/ton	0.0182	0.07955

Boiler # 3 potential emissions (coal & oil)				
Nomial Heat Input:	1018	mmbtu/hr		
Pollutant	Emission	EF Units	lbs/hr	tpy
	Factors			
PM <sup>1</sup>	0.051	lb/mmbtu	51.9	652.8
PM10 <sup>2</sup>	0.03417	lb/mmbtu	34.8	437.376
PM2.5 <sup>3</sup>	0.01479	lb/mmbtu	15.1	189.312
SOx <sup>4</sup>	1.52	lb/mmbtu	1547.4	19456
NOx <sup>5</sup>	0.86	lb/mmbtu	875.5	11008
CO <sup>6</sup>	0.5	lb/ton	19.8828	87.0867188
VOC <sup>6</sup>	0.06	lb/ton	2.38594	10.4504063
Pb	4.20E-04	lb/ton	0.0167	0.07315284

Total potential emissions		
Pollutant	lbs/hr	tpy
PM <sup>1</sup>	270.0	3264.0
PM10 <sup>2</sup>	180.9	2186.9
PM2.5 <sup>3</sup>	78.3	946.6
SOx <sup>4</sup>	8046.9	97280.0
NOx <sup>5</sup>	4365.5	52736.0
CO <sup>6</sup>	103.4	452.9
VOC <sup>6</sup>	12.4	54.3
Pb	0.1	0.4

<sup>1</sup>Particulate emission factor based on maximum stack test particulate emissions.

<sup>2</sup>PM10 emission factors are calculated as 67% of the particulate emissions including ESP controls. AP-42 Table 1-1-6.

<sup>3</sup>PM2.5 emission factors are calculated as 29% of the particulate emissions including ESP controls. AP-42 Table 1-1-6.

<sup>4</sup>SO2 emissions factor is based on sulfur dioxide standard in fuel burning rule in Chapter 40 Article 8.

<sup>5</sup>NOx emission factors are from the July 10, 1998 NOx Consent Agreement, Page 17, Condition 3 and does not include the use of LNB or SOFA.

<sup>6</sup>CO and VOC emission factors are based on AP-42 Table 1.1-3.

<sup>7</sup>Pb emissions factor is from AP-42, Table 1.1-18, Emission Factors for Trace Metals from Coal Combustion

Calculation of Emission Standards from Fuel Burning Rule (Chapter 40, Article 8)

PM: 0.1 lb/mmbtu 9 VAC 5-40-900 A.2.b.

SO2: S=1.52K 9 VAC 5-40-930 A.3

S= allowable emission rate of SO2 in lbs/hr

K=total capacity heat input in mmbtu/hr

Attachment 9

Minor NSR Permit Applicability

Facility name: Mirant  
Air Reg #: 70228

	C1			C2			C3			C4			C5			Total NEI (tpy)	Exempt Levels (tpy)	Permit?
	PA	FPE (tpy)	NEI	PA	FPE (tpy)	NEI	PA	FPE (tpy)	NEI	PA	FPE (tpy)	NEI	PA	FPE (tpy)	NEI			
PM	67.1	652.8	585.7	70.7	652.8	582.2	148.0	652.8	504.9	652.8	547.8	158.6	652.8	494.2	2714.7	15.0	Yes	
PM10	67.1	437.4	370.3	70.7	437.4	366.7	148.0	437.4	289.4	437.4	332.3	158.6	437.4	278.8	1637.5	10.0	Yes	
PM 2.5	67.1	189.3	122.2	70.7	189.3	118.7	148.0	189.3	41.4	189.3	84.3	158.6	189.3	30.7	397.2	10.0	Yes	
SO2	2388.2	19456.0	17087.9	2320.9	19456.0	17135.1	3572.6	19456.0	15883.5	19456.0	15845.0	3756.6	19456.0	15699.4	81650.8	10.0	Yes	
**NOx	788.1	9856.0	9057.9	719.4	9856.0	9136.6	755.1	11008.0	10252.9	11008.0	10158.1	1353.6	11008.0	9654.4	0.0	10.0	No	
CO	38.5	90.1	51.5	40.6	88.0	47.4	54.9	93.0	32.2	55.8	37.2	59.3	94.7	35.4	203.6	100.0	Yes	
VOC	5.4	10.8	5.4	5.7	10.6	4.8	7.7	10.5	2.8	7.9	3.2	8.3	11.4	3.0	19.3	10.0	Yes	
Pb	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.2	0.6	No	

NEI (minor): Future Potential Emissions - Past Actuals Emissions

NEI = NEIC1+ NEIC2+NEIC3+NEIC4+NEIC5

\*\*NOx emissions are limited to 3700 tpy for the plant in the NOx SIP Call Consent Decree.

Attachment 10

BACT Applicability

Facility name: Mirant  
Air Reg #: 70228

	C1			C2			C3			C4			C5			Total			BACT Threshold (tpy)	BACT Review <sup>7</sup>			
	PA	FA (tpy)	NEI	PA	FA (tpy)	NEI			PA	FA (tpy)	NEI												
PM	67.1	67.1	0.0	70.7	70.7	0.0	148.0	148.0	0.0	105.1	105.1	0.0	158.6	158.6	0.0	0.00	0.00	0.00	0.00	0.00	0.00	15	No
PM10	67.1	67.1	0.0	70.7	70.7	0.0	148.0	148.0	0.0	105.1	105.1	0.0	158.6	158.6	0.0	0.00	0.00	0.00	0.00	0.00	0.00	10	No
PM2.5	67.1	67.1	0.0	70.7	70.7	0.0	148.0	148.0	0.0	105.1	105.1	0.0	158.6	158.6	0.0	0.00	0.00	0.00	0.00	0.00	0.00	10	No
SO2	2368.2	2368.2	0.0	2320.9	2320.9	0.0	3572.6	3572.6	0.0	3611.0	3611.0	0.0	3796.6	3796.6	0.0	0.00	0.00	0.00	0.00	0.00	0.00	10	No
NOx	798.1	798.1	0.0	719.4	719.4	0.0	755.1	755.1	0.0	849.9	849.9	0.0	852.8	852.8	0.0	0.00	0.00	0.00	0.00	0.00	0.00	10	No
CO	38.5	38.5	0.0	40.6	40.6	0.0	54.8	54.8	0.0	55.8	55.8	0.0	59.3	59.3	0.0	0.00	0.00	0.00	0.00	0.00	0.00	100	No
VOC	5.4	5.4	0.0	5.7	5.7	0.0	7.7	7.7	0.0	7.9	7.9	0.0	8.3	8.3	0.0	0.00	0.00	0.00	0.00	0.00	0.00	10	No
Pb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.6	No

<sup>7</sup>Future actual (FA) emissions are calculated based on the proposed throughput level and existing emission controls. Currently, PM and PM10 emissions are controlled by a fabric filter with a 99.5% efficiency.