

# ATTACHMENT H

## OUTLINE OF CITY'S COMMENTS ON THE PROPOSED TWO-STACK STATE OPERATING PERMIT FOR MIRANT POTOMAC RIVER GENERATING STATION

- 1. Merged-Stack SOP is Deficient Because of Unresolved Issues**
  - Issues related to New Source Review (NSR) because of potential emission increases from stack merger remain unresolved. In order to avoid NSR, annual emissions must be limited to a properly defined baseline using the most recent 24 months of operation.
  - Issues related to NSR applicability to past projects, i.e., low-NO<sub>x</sub> burner (LNB), separated overfire air (SOFA), and trona injection remain unresolved. Virginia DEQ must publicly disclose the outcome of its NSR applicability analysis.
  - Issues related to credit for a prohibited dispersion technique, i.e., stack merger, remain unresolved.
  
- 2. Merged-Stack SOP is Not Comprehensive**
  - The proposed two-stack SOP contains no emission limits for PM<sub>2.5</sub>. Likewise, an emissions limit for mercury is not included. These represent a gross oversight on the part of Virginia DEQ.
  - Without NAAQS-compliant PM<sub>2.5</sub> limits, the proposed SOP is not comprehensive and is not aimed at protecting public health.
  
- 3. PM<sub>2.5</sub> Emissions and Impacts Must be Addressed**
  - PM<sub>2.5</sub> modeling must be applied to establish proper emission limits. Several states, including New Jersey, New York and Connecticut have proactively proceeded to establish PM<sub>2.5</sub> modeling methodology for individual sources and are using it to set NAAQS-compliant emission limits. Modeling of direct PM<sub>2.5</sub> emissions can be accomplished via standard modeling, as these other states are doing.
  - Given that Northern Virginia is a nonattainment area for PM<sub>2.5</sub>, Virginia DEQ's approach to date of using PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub> is flawed and short-sighted. For Virginia DEQ to knowingly omit any limits on PM<sub>2.5</sub> is a violation of Virginia regulations and a breach of trust that citizens place in them to protect public health and the environment.
  - Alexandria's analysis shows that stringent emission limits and pollution controls are required to minimize PM<sub>2.5</sub> emissions to a level that is NAAQS protective.
  
- 4. Baghouses are Required to Provide Adequate PM<sub>2.5</sub> Control**
  - Alexandria's analysis shows that PM<sub>2.5</sub> emissions from PRGS must be significantly lower than 0.01 lb/MMBtu to show NAAQS compliance. The existing PM controls, i.e., ESPs, are inadequate to provide this level of control.
  - Strict emission limits, met by a combination of operational restrictions and/or state-of-the-art controls, are necessary to protect NAAQS.

- Baghouse is the best PM control technology capable of ensuring sufficiently low emissions on a continuous basis. In addition, baghouse will help further control SO<sub>2</sub> and mercury emissions. Baghouse will also allow Mirant to properly claim dispersion credit for PM<sub>10</sub> and PM<sub>2.5</sub> emissions due to stack merger.
- Alexandria strongly believes that baghouses are essential to protect public health. In fact, baghouse would have likely been required if Mirant had properly applied for a major NSR permit for its installation of trona injection.

**5. The Limits are Arbitrary, Excessively High, and Allow Emissions Increases**

- The proposed coal sulfur content limit per shipment is 1.2% compared to 0.9% in the present permit, i.e., a 33% increase. This would consequently lead to the need to use 33% more trona to meet the same SO<sub>2</sub> emissions target, causing significantly more particulate emissions.
- The short term (lb/hr) SO<sub>2</sub> emission limits in the proposed SOP are greater than the limits in the June 1, 2007 SOP. The short term (lb/hr) limits are also greater than the limits proposed in the five-stack SOP in October 2007. This is a clear indication that dispersion credit is being allowed for stack merge which is a prohibited dispersion technique.
- The proposed emission limits of 0.045 lb/MMBtu for PM and 0.03 lb/MMBtu for PM<sub>10</sub> are much greater than the plant has emitted in the past and about twice as high as it can achieve with its ESPs. Similarly, the annual PM and PM<sub>10</sub> limits of 562 and 377 tons/yr, respectively, are about three times as high as the plant emitted in the past. This is a virtual license for the plant to increase emissions.
- The short term NO<sub>x</sub> limit of 0.30 lb/MMBtu does not reflect the performance of the LNB/SOFA pollution controls, i.e., 0.22 lb/MMBtu. The annual NO<sub>x</sub> limits are much greater than the plant emitted in 2006, and also much greater than those allowed under the CAIR rule which will take effect in 2009, i.e., less than one year after the issuance of this SOP. The CAIR limits must be stipulated in the SOP.
- Mirant has known for several years that its CO emissions are greater than the approximately 250 ton/yr that it has reported in its past annual emissions statements. The CO emissions were further increased due to the installation of LNB and SOFA controls, without any review under NSR regulations. Now, the proposed SOP allows Mirant to increase its annual CO limit based on future data it will collect via CO continuous emissions monitors (CEMS). This is a circumvention of NSR regulations.
- The opacity limit of 20% is based on antiquated standards and is not protective of public health. Instead, a limit of no more than 10% opacity must be required.

**6. CEMS for CO and PM Must be Required Immediately**

- Mirant should be required to install PM CEMS as soon as possible. PM CEMS are available currently and are in use at many facilities across the U.S., including coal-fired boilers. A twelve month timeframe for Mirant to submit a plan for their installation, with no commitment on when, if ever, the PM CEMS will be installed is unacceptable.
- Mirant should also be required to install CO CEMS immediately. The CO emissions increased as a result of the LNB and SOFA installation, as shown by Mirant's own analysis. Yet, these increases were not reviewed under NSR regulations. Instead, Mirant has continued to report the same low emissions it has reported for years. Proper



quantification and documentation of CO emissions via CEMS measurements must be required immediately.

**7. Pollution Controls Must be Optimized under All Operating Scenarios**

- The plant is required by regulation to optimize all pollution controls to minimize emissions at all times of operation. **9 VAC 5-40-20 E** which states that “[a]t all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions.”
- Emission limits must reflect true performance of the pollution control devices. Specifically, SO<sub>2</sub> limits must reflect the capability of trona control (<0.30 lb/MMBtu), NO<sub>x</sub> limits must reflect LNB/SOFA performance (<0.22 lb/MMBtu), and PM/PM<sub>10</sub>/PM<sub>2.5</sub> limits must reflect true ESP performance.

**8. Use of an Alternate Sorbent for SO<sub>2</sub> Control Must Not be Pre-Authorized**

- The Board and VDEQ must require Mirant to perform a robust evaluation of any alternate sorbent prior to authorizing its use on a continuous basis, including particle size distribution and complete stack tests for concurrent pre- and post-ESP emissions, both with and without the use of sorbent.
- Alexandria’s research of sodium bicarbonate, the alternate sorbent being considered by Mirant, shows that approximately 50% of the sorbent as injected is made up of particles less than 6 microns in size. This percentage is much greater than that found in trona as injected at the Mirant plant (~12%). Thus, even at lower injection rates, the use of sodium bicarbonate could potentially result in considerable increase in PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the stacks. The applicability of NSR must be determined, and appropriate review performed, prior to allowing the use of this sorbent.

**9. The SOP Must be Practically Enforceable**

- Heat input rates must be enforceable. Coal firing rates and trona feed rates (tons/hr) must be recorded for each boiler.
- Stack tests for PM<sub>10</sub> and PM<sub>2.5</sub> must be required every six months for the first two years. Upon demonstration of continuous compliance, the proposed staggered schedule for boiler stack tests may be followed.
- All plant data, including monitoring and testing records, must be made available to the public in a readily-accessible manner without the need for a FOIA request.



## **Outline of City's Comments on Virginia PM<sub>2.5</sub> State Implementation Plan**

### **VDEQ Must Address PM<sub>2.5</sub> Emissions from Mirant PRGS as Part of the SIP Development**

- PRGS is the single largest source of primary and secondary PM<sub>2.5</sub> emissions located within the nonattainment area of Northern Virginia. In addition, Alexandria is an "unmonitored area" because there is not a continuous ambient PM<sub>2.5</sub> monitor in the City. The City's dispersion modeling to date, including downwash, overwhelmingly demonstrates that a "hot spot" exists in the area surrounding the facility and that the PRGS contributes significantly to the nonattainment in Alexandria and Metropolitan Washington. It is therefore essential that the Virginia SIP has a mechanism requiring this facility to carry out a PM<sub>2.5</sub> analysis in order to ensure the region is in attainment for PM<sub>2.5</sub>.
- Moreover, Alexandria does not wish to repeat past history when years of NAAQS violations were discovered in 2005, which is likely to happen in the future for PM<sub>2.5</sub> unless these emissions are analyzed and controlled now.
- A Reasonable Available Control Measures (RACM) analysis should be carried out on all major sources of PM<sub>2.5</sub>.
- Virginia opacity limit should be reduced to 10% from the present limit of 20%. Both Maryland and Washington DC have opacity limit at 10%. This would significantly reduce PM<sub>2.5</sub> emissions from point sources.

