

# **ATTACHMENT I**

Outline of City's Comments on VDEQ Proposed  
Comprehensive State Operating Permits and SAPCB's  
Seven Technical Questions

# OUTLINE OF CITY'S COMMENTS ON THE DRAFT COMPREHENSIVE STATE OPERATING PERMIT AND SAPCB'S SEVEN TECHNICAL QUESTIONS

## DRAFT OPERATING PERMIT

### 1. Proposed permit will cause exceedance of NAAQS for PM<sub>2.5</sub>

- PM<sub>2.5</sub> modeling must be applied to establish proper emission limit that complies with PM<sub>2.5</sub> NAAQS and protects public health.
- Using Mirant's own emissions data, and considering only primary PM<sub>2.5</sub> emissions, the City's peer reviewed modeling conducted by professional modelers showed that PM<sub>2.5</sub> emission limit must be significantly lower than 0.01 lb/MMBtu (instead of the proposed limit of 0.055 lb/MMBtu) for the plant to comply with NAAQS.
- The existing particulate controls, i.e., ESPs, are simply not able to deliver this low emissions level on a continuous basis. Therefore, the permit should require a combination of operational restraint or state of the art control, a stringent limit, and continuous monitoring and testing to demonstrate compliance with PM<sub>2.5</sub> emission limits that do not cause NAAQS violations.
- Several states including New Jersey and Connecticut have proactively proceeded with establishing methodology for PM<sub>2.5</sub> modeling and using it to establish PM<sub>2.5</sub> emission limits for emitting sources. The EPA guidance was proposed in September 2007 and is going through a public commenting period. The science behind this guidance is well established. VDEQ should use this guidance now to calculate and implement proper emission limit that would be protective of PM<sub>2.5</sub> NAAQS and public health.
- Considering the fact that the Northern Virginia region is a PM<sub>2.5</sub> non-attainment area, VDEQ's approach to use PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub> is both short-sighted and irresponsible, especially since the modeling results are being compared to PM<sub>10</sub> NAAQS and not PM<sub>2.5</sub> NAAQS.
- MWCOG has stated on record that the region should do more to reduce PM<sub>2.5</sub> emissions, and scientific results from the EPA's Science Advisory Board showed that the ambient PM<sub>2.5</sub> limit must be even lower than the new annual standard of 15 ug/m<sup>3</sup> to protect public health. For VDEQ to knowingly set a permit limit that will cause violation of NAAQS is a violation of the law and trust that public places in them to protect public health.

### 2. Only baghouse will ensure public protection against PM<sub>2.5</sub> pollution on a continuous basis

- The Clean Air Act envisioned that older plants, over a period of time will upgrade the pollution control technologies. This plant, by circumventing applicable regulations is still operating with pollution control technologies of 1970s.
- This Plant is in the middle of an urban area with short stacks, and the known science about ill effects of pollution caused by uncontrolled or poorly controlled emissions requires that state of the art pollution control technologies should be required to be used at this plant.
- Baghouse is the best technology for ensuring the lowest PM<sub>2.5</sub> emissions on a continuous basis. In addition, it will provide increased removal of SO<sub>2</sub> and mercury from the stack gas. The City strongly believes that baghouses should be required at this plant to comply with PM<sub>2.5</sub> NAAQS.

**3. Emissions limits are excessively high, do not protect public health and will seriously worsen air quality and jeopardize public health in Alexandria and surrounding areas**

- At the plant open house on October 13, 2007, Mirant reported that the total particulate emissions were 0.03 lb/MMBtu for 2006 which amounts to 203.6 tons per year. The proposed permit allows for a PM limit of 562 tons per year, which is 2.8 times the actual annual emissions. PM emissions have been the primary concern of the community and issuing a permit that actually allows for increase in PM emissions does not make any sense and is a virtual license for the plant to increase emissions in future.
- The December 2006 stack test results showed a range of 0.0133 - 0.0145 lb/MMBtu for PM<sub>10</sub> emissions including condensables. The proposed permit sets the limit of 0.055 lb/MMBtu for the plant which is much higher than what has been represented by the facility as their actual emission rate. Such an excessive emission rate does not meet the regulation **9 VAC 5-40-20 E** which states "*[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.*"
- Since June 2007, Mirant PRGS has proven to be able to control SO<sub>2</sub> emissions to a level below 0.3 lb/MMBtu on a continuous basis. Given the present SO<sub>2</sub> annual limit of 3813 tons per year, the plant can operate at a total annual heat input level of 25,420,000 MMBtu, which is 87% higher than the 2006 total heat input to the plant and very close to the historically highest level. Higher heat input means burning more coal. With the proposed permit limits for PM, and PM<sub>10</sub> that are excessively high, there is no assurance with this permit that PM emissions will not increase over the actual emissions in 2005 and 2006. **Without appropriate permit limits, this proposed permit will become a license to increase emissions in future.**
- 2006 NO<sub>x</sub> emissions were reported to be 1,867 tons compared to the proposed permit limit of 3700 tons per year. Once again, the permit level will give the plant full flexibility to increase emissions without regard to protecting public health and the environment.
- Opacity limit of 20% is based on antiquated standards and is not protective of public health. Opacity limit of no greater than 10% should be applied to this facility.

**4. Variable emission limits are akin to intermittent controls and should not be allowed under this permit**

- This permit allows the plant to use pollution control equipment variably and in proportion to the operations at the plant. Such a regime of pollution control is called intermittent control and is prohibited since it is in violation of the Clean Air Act.
- Short term emission limits are arbitrarily high and reflect unreasonable scenarios under which the plant does not operate. For instance, the proposed SO<sub>2</sub> 24-hour limit is up to 0.50 lb/MMBtu for certain operating scenario while it has been proven that the plant can operate continuously at 0.3 lb/MMBtu. Limits must be reflective of controls at the plant and realistic operating scenarios and once determined, should apply to all operating scenarios at all times, and should be enforced through the permit.

**5. Trona has not been proven to reduce PM emissions and should not be permitted/sanctioned without appropriate NSR analysis**

- There is no credible evidence to date that shows a reduction in PM<sub>10</sub> with the use of trona while the plant data (~20,000 data points) clearly shows that opacity increases consistently for every boiler with the use of trona.
- Since a large amount of trona must be used to achieve 0.3 lb/MMBtu and combined with the use of more coal at elevated production level, particulate emissions will significantly increase as a result. The proposed emission limits on PM, PM<sub>10</sub>, and PM<sub>2.5</sub> should take this into account and ensure that such emissions will not increase as the result of this permit.

**6. Trona health impacts must be evaluated**

- The trona supplier's data shows that trona contains 2% silica, a known carcinogen. VDEQ should continue to evaluate the long term health impacts associated with the use of trona.

**7. CEMS for PM and CO must be required immediately**

- VDEQ should require the immediate use of PM CEMS on all boilers at PRGS for compliance purpose.
- Likewise, VDEQ should require CO CEMS for compliance purpose immediately. Mirant's stack test data showed that CO emissions have significantly increased with the use of low-NOx burner, SOFA and trona. Installation of these technologies without appropriate permits was a circumvention of the NSR process.

**8. Pollution controls must be optimized at all times. The structure of the permit and the permit limits fail to accomplish this essential requirement**

- The plant is required by regulation to optimize all pollution controls in order to minimize emissions at all times. **9 VAC 5-40-20 E** which states “[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 when these are under good working conditions. Specifically, the two hot and cold ESPs must operate in such a way to achieve 99% and 96% design removal efficiency, respectively. Similarly, trona must be used in a manner that achieves no more than 0.30 lb/MMBtu of SO<sub>2</sub> emissions.

**9. Annual emissions must be held to a baseline**

- Annual emission limits must not exceed the baseline (2005-2006). VDEQ's July 2006 letter asserted that all NSR analysis would be completed before the issuance of the permit and this has not happened.
- In absence of this NSR analysis, and the fact that the past physical modifications at the plant likely triggered NSR, the plant should not be given emission limits that exceed the baseline and be limited to their 2005-2006 emissions.

#### **10. Stack merger requires a pre-construction NSR permit**

- If Mirant decides to proceed with the stack merger project at some point in the future, the project must go through NSR permitting process. Also, dispersion credit must be denied unless accompanied by the installation of a pollution control device.

#### **OVERALL**

It is the City's belief that the draft permit, in its present form, will allow the plant to significantly increase emissions up to the historical levels due to excessively high PM and NO<sub>x</sub> emission limits. Public health will be seriously compromised due to exposure to PM<sub>2.5</sub> emissions. The City requests that VDEQ and SAPCB determine an appropriate, more stringent and protective PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>x</sub> and SO<sub>2</sub> limits for the plant.

## SAPCB'S SEVEN TECHNICAL QUESTIONS

1. Should Continuous Emission Monitoring Systems be required for all Particulate Matter regulated by the Regulations for the Control and Abatement of Air Pollution and (1) does the Environmental Protection Agency (EPA) have an approved methodology for these systems, and (2) has the EPA certified an instack instrument for this purpose?

PM CEMS should be required as part of this SOP for compliance purpose. PM has been the pollutant of concern for the community. With the use of trona, opacity data shows significant potential for increased PM emissions. The technology to install PM CEMS is commercially available and the immediate installation of CEMS should be a requirement of this permit.

2. Should the operating performance of the control equipment for sulfur dioxide (SO<sub>2</sub>) be the basis for permit limitations rather than the array of operating scenarios?

The operating performance of the control equipment for sulfur dioxide should be the basis for permit limitations for all operating scenarios (rather than different limits for the array of operating scenarios). In addition, the limits must be protective of NAAQS. Mirant should optimize its pollution control devices at all times to minimize emissions and the impacts to the population and environment.

3. Are the varying SO<sub>2</sub> control rates considered intermittent controls?

Varying SO<sub>2</sub> control rates would be considered intermittent controls which are prohibited under federal and state regulations. City strongly objects to any permit that allows Mirant PRGS to use varying levels of controls to show compliance with NAAQS.

4. Should permit emission rates for SO<sub>2</sub> be established to ensure the use of Trona (or other sorbent materials), and should the proposed minimum sulfur content requirement be eliminated?

The permit emission rates for SO<sub>2</sub> should be established to ensure the optimal use of trona at all times. The proposed minimum sulfur content requirement can be eliminated from the permit, but the maximum sulfur content of coal should not be relaxed and should stay at 0.9%. Relaxing this would mean more trona use, and thus PM emissions. Use of alternative sorbent should not be sanctioned under this permit and requires separate evaluation and permit.

5. Should the Clean Air Interstate Rule and Clean Air Mercury Rule requirements be included in the permit?

The Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR) requirements should be included in the permit since they are federally enforceable and will become effective during the life of the permit. Otherwise, the permit will have to be re-opened under VDEQ regulations to include these requirements. Also, the more stringent of the proposed limits and CAIR/ CAMR, that are protective of NAAQS, must be the permit limits. For instance, the present SO<sub>2</sub> limit of 3,813 tons per year is more stringent than the CAIR limit and should stay. Likewise, the CAIR NO<sub>x</sub> limit of 1,734 tons per year should be the limit for this permit when it becomes enforceable in 2009.

6. What changes should be made to the architecture of the permit and the emission limits in the proposed permit?

The NO<sub>x</sub> and PM emission limits must be much more stringent to protect the NAAQS and public health, and to reflect actual pollution control performance. Emission limits must apply at all times under all operational scenarios.

7. What changes or additions should be made to the proposed parametric monitoring and (1) does such monitoring obviate the need for Particulate Matter Continuous Emissions Monitoring Systems and (2) what is the commercial availability of these instruments?

The proposed parametric monitoring is not adequate to ensure good ESP performance at all times since it cannot readily detect unforeseen operating difficulties as well as changing particulate loading at the inlet of these devices. Thus, it cannot replace the use of PM CEMS which directly measure PM emissions. As noted above, the commercial availability of these PM CEMS is abundant since these devices have been used in Europe since the 1970's and more recently in the US. In particular, the beta gauge PM CEMS is the closest to the Federal Reference Method for particulates in terms of measurement accuracy.