ARLINGTON
VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES
Director's Office

2100 Clarendon Boulevard, 9th Floor, Arlington, VA 22201
TEL 703-228-4488 FAX 703-228-3594 TTY 703.228.4611 www.arlingtonva.us

January 29, 2008

Richard D. Langford, Chairman
Bruce C. Buckheit
John N. Hanson
Hullihen W. Moore
Vivian E. Thomson
State Air Pollution Control Board
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

David K. Paylor, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Terry Darton,
Air Permit Manager
Virginia Department of Environmental Quality
Northern Virginia Regional Office
13901 Crown Court
Woodbridge, Virginia 22193

Honorable Board Members, Director Paylor, and Mr. Darton:

Arlington County submits the following comments on the proposed merged-stack State Operating Permit (SOP) for the Mirant Potomac River LLC's Potomac River Generating Station, in response to the Virginia Department of Environmental Quality's public notice of December 21, 2007.

Staff reviewed the draft permit, as well as DEQ's "Statement of Legal and Factual Basis" and the document entitled, "Virginia Department of Environmental Quality (DEQ) Technical Review of the Air Quality Analyses in Support of the Merged Stack (2-Stack) Comprehensive State Operating Permit for the Mirant – Potomac River Generating Station."

We also reviewed the very thorough and convincing technical comments submitted by the City of Alexandria. We are in complete agreement with the issues raised by the City and believe there are fundamental deficiencies in the proposed SOP that must be addressed before issuing any permit for this facility.

As in our previous comments on the 5-stack SOP, our concerns reflect the fact that the region does not currently meet National Ambient Air Quality Standards (NAAQS) for either ozone or fine particulate matter equal to or less than 2.5 microns in size ($PM_{2.5}$). Arlington County is located only 1.3 miles downwind of the Potomac River Generating Station. Given prevailing wind directions during summer months, we are especially concerned about any potential adverse impacts to the residents who live and work in and around the Crystal City area of south Arlington, nearest the plant.

The Potomac River Generating Station is one of the largest emission sources in the entire metropolitan area. The plant is located near the center of the urban core and was constructed in the 1950's. It uses pollution control technologies that are no longer considered adequate in terms of current standards and the existing stacks do not meet Good Engineering Practice guidelines for stack height.

In light of these facts, DEQ must fully address the deficiencies identified in Attachment 1 to ensure that the health and safety of our communities are protected to the maximum extent allowable under federal and state law.

Arlington County appreciates this opportunity to comment on the proposed permit for the Potomac River Generating Station. We strongly urge the Department of Environmental Quality to reconsider its recommendation supporting the stack merge permit and the disturbingly critical deficiencies it embraces. We ask that the State Air Pollution Control Board not approve this permit, but instead direct DEQ staff to proceed with the issuance of a five-stack permit that responds to the comments provided by Arlington County and the City of Alexandria in November, 2007.

Respectfully yours,

Dr. William Roper
Director, Department of Environmental Services

Victoria Greenfield,
Director, DES – Utilities and Environmental Policy Division

Cc: Ron Carlee, County Manager
Walter Tejada, Chairman, Arlington County Board
Richard J. Baier, P.E., Director, Alexandria Dept. of Transportation and Environmental Services
William Skrabak, Environmental Quality Division Chief, Alexandria Dept. of Transportation and Environmental Services

Key Deficiencies Noted in the Proposed Two-Stack State Operating Permit for the 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-NOx burner (LNB), separated overfire air (SOFA), and trona injection remain unresolved.
- Virginia DEQ must publicly disclose the outcome of its NSR applicability analysis in the Mirant case, particularly given the inconsistent application of the NSR regulations by DEQ in at least one other case in Northern Virginia – Virginia Paving.
- Credit should not be granted for a prohibited dispersion technique (i.e., stack merger.)

2. Merged-Stack SOP is Not Comprehensive

- The proposed two-stack SOP contains no emission limits for $PM_{2.5}$. Likewise, an emissions limit for mercury is not included.
- Without NAAQS-compliant $PM_{2.5}$ limits, the proposed SOP is not comprehensive and is not effective at protecting public health.
- These are very serious deficiencies from a public health perspective and DEQ must not proceed until these issues are fully addressed.

3. $PM_{2.5}$ Emissions and Impacts Must be Addressed

- $PM_{2.5}$ modeling must be applied to establish proper emission limits. Several states, including New Jersey, New York and Connecticut have proactively proceeded to establish $PM_{2.5}$ modeling methodology for individual sources and are using it to set NAAQS-compliant emission limits. Modeling of direct $PM_{2.5}$ emissions can be accomplished via standard modeling, as these other states are doing.
- Given that Northern Virginia is a non-attainment area for $PM_{2.5}$, Virginia DEQ's approach to date of using PM_{10} as a surrogate for $PM_{2.5}$ is flawed and short-sighted. For Virginia DEQ to knowingly omit any limits on $PM_{2.5}$ is a violation of Virginia regulations and a breach of confidence that DEQ is adequately protecting public health and the environment.
- Alexandria's modeling analysis raises serious questions about the adequacy of DEQ's review of the Mirant modeling analysis and shows that stringent emission limits and pollution controls are required to minimize $PM_{2.5}$ emissions to a level that is NAAQS protective.

4. **Baghouses are Required to Provide Adequate $PM_{2.5}$ Control**
   - Alexandria's analysis shows that $PM_{2.5}$ 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.
   - A baghouse is the best particulate matter control technology capable of ensuring sufficiently low emissions on a continuous basis. In addition, a baghouse will help further control SO_2 and mercury emissions. A baghouse may also allow Mirant to properly claim dispersion credit for PM_{10} and $PM_{2.5}$ emissions due to a stack merger.
   - Arlington agrees with Alexandria's conclusion that a baghouse is essential to protect public health. Furthermore, a 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 Specified in the SOP 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_2 emissions target, causing significantly more particulate emissions.
   - The short term (lb/hr) SO_2 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 the stack merger, which we believe is a prohibited dispersion technique.
   - The proposed emission limits of 0.045 lb/MMBtu for PM and 0.03 lb/MMBtu for PM_{10} are much greater than the plant has emitted in the past and about twice as high as it can achieve with its current ESPs. Similarly, the annual PM and PM_{10} 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 NOx 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 NOx 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_2 limits must reflect the capability of trona control (<0.30 lb/MMBtu), NOx limits must reflect LNB/SOFA performance (<0.22 lb/MMBtu), and $PM/PM_{10}/PM_{2.5}$ limits must reflect true ESP performance.

8. Use of an Alternate Sorbent for SO_2 Control Must Not be Pre-Authorized

- The Board and DEQ 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 a considerable increase in PM_{10} and $PM_{2.5}$ 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_{10} and $PM_{2.5}$ 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.