MIRANT COMMUNITY MONITORING GROUP

MEETING

June 9, 2011, 7:30 pm – 9:30 pm
City Hall – Conference Room #1101

AGENDA

7:30 – 7:40	Welcome and Introductions
7:40 – 7:50	Introductory Remarks – Staff
7:50 – 8:20	Progress on Phase I & Phase II Projects – Staff
8:20 – 9:00	Regulatory Developments – Staff • VDEQ Consent Order • EPA Proposed Mercury Rule for Coal-fired Power Plants • New 1-Hour SO_2 NAAQS o City, GenOn and Sierra Club Letters to VDEQ
9:00 – 9:10	Miscellaneous Correspondence – Staff • GenOn Application to VDEQ for Alternate Use of Sodium Bicarbonate (SBC)
9:10 – 9:30	Next Steps
9:30	Adjourn

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Date: 6/7/2011
File: PRGS-0-CO-016-WCLT-0010
WBS: 016

Mr. K. D. Tran
Senior Air Pollution Control Specialist
Office of Environmental Quality
301 King Street
Room 3000 City Hall
Alexandria, VA 22314

Re: GenOn PRGS Phase 2 Emissions Reduction Schedule Comments

Dear Mr. Tran:

This letter is a summary of major items that have influenced the time required to get to an award of an EPC contract for the Phase II of the emission reduction project for the Potomac River Generating Station.

The agreement between the City of Alexandria and GenOn had a number of specific steps, hold points and durations specified. When laid out in a logical time phased schedule, this resulted in an EPC award date in September, 2010.

Per that agreement, some form of baghouse was the preferred technology for the emissions reduction. Furthermore, the agreement also indicated that it would be preferred that the technology solution be applied to all five units (or at least as many units as possible.) As the agreement also allowed other commercially available technologies to be considered, preliminary solicitation for other technologies was also done.

Space became a significant issue. Finding an acceptable location for new baghouse structure(s) turned out to be unsuccessful. This left reusing the existing hot side or cold side precipitators. Studies were done to explore re-using the existing hot side precipitators. There was no economically viable means of doing so that stayed within the space parameters that had to be adhered to. Additionally, there was no economically viable means of addressing all of the structural issues associated with duct modifications required to be able to re-use the existing hot side precipitators.

This left re-using the cold side precipitators. These precipitators presented the challenge of being quite small and in a very difficult place for construction – indoors and under the existing stacks. Thus, this would not be an "off-the-shelf" solution. As this possibility was explored, it had to be determined if the new fans installed as part of the stack merge project could overcome the additional pressure drop that would be caused by retrofitting the cold side precipitators to be baghouses. As part of that effort, two sets of fan testing were contracted for

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and conducted. The outcome was that more fan power was required. This issue was explored with the fan vendor and all possible means of increasing the fan capacity were explored, but none was economically viable.

In exploring additional pressure drop mitigation means, another vendor was contracted who conducted testing to determine if silencer or other in-duct changes could be employed to lower the pressure drop. Utilizing the data received from the fan testing, data from the silencer and other in-duct change recommendations, and data from the existing fan supplier, WorleyParsons then conducted a transient analysis study to determine the expected pressure drops with the all proposed changes and running the existing fans at their maximum load. All of the results were reviewed and discussed in detail with GenOn and the City of Alexandria before it was agreed that baghouses, for at least some of the five units could be a viable solution. These additional studies, the different testing, the analysis and discussions added approximately ten months to the schedule.

The bid package for the EPC contracts was more difficult to prepare than originally contemplated – more so from a commercial viewpoint than a technical one. Also, despite the effort that went into the bid package, four of the five bidders failed to follow the specified schedule restrictions. This in turn has led to the need to have the bidders revise their bids and to receive and review the bid revisions. These increases to the bid preparation and to the bidding and review time are expected to result in an addition of approximately two months to the schedule.

As a result, the final EPC award in anticipated to occur the end of August 2011.

Sincerely yours,

Michael Holdridge
Project Manager

MCH:dl

cc: Mr. L. Sharma
Mr. R. Bevacqua

GENON PRGS PARTICULATE EMISSIONS REDUCTION PROJECT

PRESENT SCHEDULE

Task Name	Duration Work-days	Start	Finish
Award to EPC Contractor	0	8/31/11	8/31/11
LNTP (Limited Notice To Proceed)	0	9/1/11	9/1/11
Engineering, Permit Preparation, Procurement Preparation	253	9/2/11	8/31/12
VDEQ Permit Approval Process*	125	10/3/11	3/30/12
FNTP (Full Notice To Proceed)	0	4/2/12	4/2/12
Procurement Release, Fabrication, Material Receipt	107	4/3/12	8/31/12
First PJFF Retrofit, Plus Stack and Silencer Modifications	62	9/4/12	11/30/12
Second PJFF Retrofit	65	3/4/13	5/31/13
Third PJFF Retrofit	65	9/2/13	11/29/13

* A delay in the VDEQ Permit Approval Process would most likely move the first PJFF retrofit from fall 2012 to spring 2013

SUMMARY OF EPA PROPOSED MERCURY AND AIR TOXICS STANDARDS

KEY FACTS

- EPA proposal aims at reducing emissions of heavy metals including mercury (Hg), arsenic, chromium and nickel, and acid gases including hydrogen chloride (HCl) and hydrogen fluoride (HF), from existing and new coal- and oil-fired electric utility steam generating units (EGUs). About 1,200 existing coal-fired EGUs are affected by this proposal.
- The following are proposed limits that would apply to GenOn PRGS. These proposed limits are the so-called MACT (Maximum Achievable Control Technology) Floor established by the EPA. These limits would apply for each operating boiler unit.
    - 0.030 Lb per million Btu for Total Particulate Matter (PM)
    - 0.0020 Lb per million Btu for HCl emissions
    - 1 Lb per trillion Btu for Hg emissions
- If two or more boilers operating with different fuels exhaust through a common stack, then the most stringent limits would apply.
- The proposed revisions to the NSPS (New Source Performance Standard) would include revised numerical EGU emission limits for PM, SO_2, and NO_x.
- EPA will accept comment on the proposal until July 5, 2011. The proposed rules are posted at:

    http://www.epa.gov/airquality/powerplanttoxics/actions.html.

FACT SHEET
PROPOSED MERCURY AND AIR TOXICS STANDARDS

ACTION

- On March 16, 2011, the Environmental Protection Agency (EPA) issued a proposed rule that would reduce emissions of toxic air pollutants from power plants. Specifically, the proposal would reduce emissions from new and existing coal- and oil-fired electric utility steam generating units (EGUs).
    - EPA is also proposing to revise the new source performance standards (NSPS) for fossil-fuel-fired EGUs. This NSPS would revise the standards new coal- and oil-fired power plants must meet for particulate matter (PM), sulfur dioxide (SO2), and nitrogen oxides (NOx).
- The proposed toxics rule would reduce emissions of heavy metals, including mercury (Hg), arsenic, chromium, and nickel, and acid gases, including hydrogen chloride (HCl) and hydrogen fluoride (HF). These toxic air pollutants, also known as hazardous air pollutants or air toxics, are known or suspected of causing cancer and other serious health effects.
- Power plants are the largest source of mercury emissions to the air. Once mercury from the air reaches water, microorganisms can change it into methylmercury, a highly toxic form that builds up in fish. People are primarily exposed to mercury by eating contaminated fish.
    - Methylmercury exposure is a particular concern for women of childbearing age, unborn babies, and young children because studies have linked high levels of methylmercury to damage to the developing nervous system. This damage can impair children's ability to think and learn.
    - Mercury and other power plant emissions also damage the environment and pollute our nation's lakes, streams, and fish.
- Other toxic metals emitted from power plants, such as arsenic, chromium and nickel can cause cancer. Reducing toxic power plant emissions will also cut fine particle pollution and prevent thousands of premature deaths and tens of thousands of heart attacks, bronchitis cases and asthma episodes.
- As part of this rulemaking, EPA is also proposing monitoring changes and other minor amendments to the industrial, commercial, and institutional steam generating units (i.e., boilers) NSPS, but does not propose to amend those emission standards.
- EPA will take public comment on this action for 60 days following publication of the proposal in the Federal Register.
    - EPA will hold public hearings on the proposal in Atlanta, GA, Chicago, IL, and Philadelphia, PA. Details on the timing and location for those hearings will be made available soon in a separate Federal Register notice and posted at http://www.epa.gov/airquality/powerplanttoxics/

AFFECTED SOURCES

- The mercury and air toxics standards will affect EGUs that burn coal or oil for the purpose of generating electricity for sale and distribution through the national electric grid to the public are affected by this rule.
    - These include investor-owned units as well as units owned by the Federal government, municipalities, and cooperatives that provide electricity for commercial, industrial, and residential uses.
    - EPA has identified two different subcategories of coal-fired EGUs, two different subcategories of oil-fired EGUs, and a subcategory for units that combust gasified coal or solid oil (Integrated gasification and combined cycle (IGCC) units) based on the design of the various types of boilers at different power plants. The proposed air toxics rule includes emission standards and other requirements for each subcategory.
    - EPA estimates that there are approximately 1,350 units affected by this action. Approximately 1,200 existing coal-fired units and 150 oil fired units at about 525 power plants.
- The NSPS will affect boilers that burn fuels, including coal, oil, or natural gas to produce steam. The steam is used to produce electricity or provide heat.
    - Boilers are used at industrial facilities (e.g., refineries, chemical and manufacturing plants, and paper mills), commercial establishments (e.g., stores/malls, laundries, apartments, restaurants, hotels/motels), and institutional facilities (e.g., medical centers, educational and religious facilities, and municipal buildings).

REQUIREMENTS

- For all existing and new coal-fired EGUs, the proposed standards would establish numerical emission limits for mercury, PM (a surrogate for toxic non-mercury metals), and HCl (a surrogate for toxic acid gases).
- For all existing and new oil-fired EGUs, the proposed toxics rule would establish numerical emission limits for total metals, HCl, and HF. Compliance with the metals standards is through fuel testing.
- The proposal would establish alternative standards, including SO_2 (as an alternate to HCl), individual non-mercury metal air toxics (as an alternate to PM), and total non-mercury metal air toxics (as an alternate to PM) for certain subcategories of power plants.
- A range of widely available, technical and economically feasible practices, technologies, and compliance strategies are available to power plants to meet the emission limits, including wet and dry scrubbers, dry sorbent injection systems, activated carbon injection systems, and baghouses.

- The proposed standards would establish work practices, instead of numerical emission limits, to limit emissions of organic air toxics, including dioxin/furan, from existing and new coal- and oil-fired power plants. Because dioxins and furans form from inefficient combustion, the proposed work practice standards would require an annual performance test program for each EGU that would include inspection, adjustment, and/or maintenance and repairs to ensure optimal combustion.

- The proposed revisions to the NSPS would include revised numerical EGU emission limits for PM, SO_2, and NO_X.

BENEFITS AND COSTS

- Power plants are the largest source of several harmful pollutants. They are responsible for 50 percent of mercury emissions, over 50 percent of acid gas emissions, and about 25 percent of toxic metal emissions in the United States.
    - Coal-fired power plants are responsible for 99 percent of mercury emissions and the bulk the other pollutants from the power sector.
    - EPA expects that dozens of coal-fired plants already meet at least some part of the proposed standards, however, about 44 percent of all coal-fired plants lack advanced pollution control equipment.

- The updated standards will provide certainty and level the playing field so that all power plants will have to limit their toxic emissions – ultimately preventing 91 percent of the mercury in burned coal from being emitted into the air. The rule provides up to 4 years for facilities to meet the standards.

- EPA did not estimate the benefits associated with reducing exposure to air toxics or other air pollutants, ecosystem effects, or visibility impairment. However, the proposed toxics rule would cut emissions of pollutants that are of particular concern for children. Mercury and lead can adversely affect developing brains – including effects on IQ, learning, and memory.

- In addition to the benefits of reducing exposure to air toxics, these standards would reduce concentrations of fine particles ($PM_{2.5}$) in our air. This will significantly improve public health by preventing hundreds of thousands of illnesses and thousands of premature deaths each year.

- In 2016, these proposed rules would avoid:
    - 6,800 – 17,000 premature deaths,
    - 4,500 cases of chronic bronchitis,
    - 11,000 nonfatal heart attacks,
    - 12,200 hospital and emergency room visits,
    - 11,000 cases of acute bronchitis,
    - 220,000 cases of respiratory symptoms,
    - 850,000 days when people miss work,
    - 120,000 cases of aggravated asthma, and
    - 5.1 million days when people must restrict their activities

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- EPA estimates the health benefits associated with reduced exposure to fine particles are $59 billion to $140 billion in 2016 (2007$).

- EPA estimates the total national annual cost of this rule will be $10.9 billion in the year 2016.

- EPA anticipates that the proposed toxics rule may have a significant economic impact on small entities. Thus, as required by section 609(b) of the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), we conducted outreach to small entities and convened a Small Business Advocacy Review (SBAR) Panel to obtain advice and recommendations from representatives of the small entities that potentially would be subject to the requirements of the proposed toxics rule.

- EPA also consulted with State, local, and tribal officials in the process of developing the proposed toxics rule to permit them to have input into its development.

BACKGROUND

- On December 20, 2000, EPA made a determination under the Clean Air Act that it was appropriate and necessary to regulate coal- and oil-fired EGUs under CAA section 112 and added such units to the CAA section 112(c) list (112 list) of sources that must be regulated. On January 30, 2004, EPA proposed section 112 standards for Hg emissions from coal-fired EGUs and nickel (Ni) emissions from oil-fired EGUs, and, in the alternative, proposed to remove EGUs from the 112 list based on a finding that it was neither appropriate nor necessary to regulate EGUs under this section of the Clean Air Act. On March 29, 2005, EPA issued a final revision of the appropriate and necessary finding for coal- and oil-fired EGUs and removed such units from the 112 list. EPA never finalized the proposed section 112 standards for Hg and Ni.

- The removal of EGUs from the 112 list was challenged in court. On February 8, 2008, the court determined that EPA violated the CAA by removing EGUs from the 112 list. As a result, EGUs remain a CAA section 112(c) listed source category.

- In response to the D.C. Circuit Court's vacatur, EPA is proposing section 112 air toxics standards for all coal- and oil-fired EGUs that reflect the application of the maximum achievable control technology (MACT) consistent with the requirements of the CAA.

- This proposed toxics rule would regulate units at both major and area sources. Major sources are those that have the potential to emit 10 tpy or more of any one air toxic or 25 tpy or more of any combination of air toxics.

- In accordance with a Consent Decree, the EPA Administrator must sign a final section 112 rule by November 16, 2011.

- On February 27, 2006, EPA promulgated amendments to the NSPS for PM, SO_2, and NO_X

contained in the standards of performance for EGUs. EPA was subsequently sued on the amendments and on September 2, 2009, was granted a voluntary remand without vacatur of the 2006 amendments. The proposed revisions to the NSPS are in response to that voluntary remand.

HOW TO COMMENT

- EPA will accept comment on the proposal until July 5, 2011. Comments on the proposed toxics rule should be identified by Docket ID No. EPA-HQ-OAR-2009-0234. Comments on the proposed NSPS revisions should be identified by Docket ID No. EPA-HQ-OAR-2011-0044. All comments may be submitted by one of the following methods:
  - www.regulations.gov: Follow the on-line instructions for submitting comments.
  - E-mail: Comments may be sent by electronic mail (e-mail) to a-and-r-Docket@epa.gov.
  - Fax: Fax your comments to: 202-566-1741.
  - Mail: Send your comments to: Air and Radiation Docket and Information Center, Environmental Protection Agency, Mail Code: 2822T, 1200 Pennsylvania Ave., NW, Washington, DC, 20460.
  - Hand Delivery or Courier: Deliver your comments to: EPA Docket Center, Room 3334, 1301 Constitution Ave., NW, Washington, DC, 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

FOR MORE INFORMATION

- The proposed rules are posted at: http://www.epa.gov/airquality/powerplanttoxics/actions.html.

- Today's proposed rules and other background information are also available either electronically at http://www.regulations.gov, EPA's electronic public docket and comment system, or in hardcopy at the EPA Docket Center's Public Reading Room.
  - The Public Reading Room is located in the EPA Headquarters Library, Room Number 3334 in the EPA West Building, located at 1301 Constitution Ave., NW, Washington, DC. Hours of operation are 8:30 a.m. to 4:30 p.m. eastern standard time, Monday through Friday, excluding Federal holidays.
  - Visitors are required to show photographic identification, pass through a metal detector, and sign the EPA visitor log. All visitor materials will be processed through an X-ray machine as well. Visitors will be provided a badge that must be visible at all times.
  - Materials for the proposed toxics rule can be accessed using Docket ID No. EPA-HQ-OAR-2009-0234.
  - Materials for the proposed NSPS revisions can be accessed using Docket ID No. EPA-HQ-OAR-2011-0044.

NEW NAAQS FOR SULFUR DIOXIDE

	SULFUR DIOXIDE
Current NAAQS, ppb	**Primary Standard** 30 ppb Annual 140 ppb 24-hour **Secondary Standard** 500 ppb 3-hour
Proposed NAAQS, ppb	**50-100** **1-hour standard**
Final Promulgated NAAQS, ppb	**75**
Date Put on Federal Register	12-8-09
Public Hearing Date and Location	1-5-10 Atlanta, GA
Period of Written Comments	12-8-09 to 2-8-10
Promulgation Date	**6-2-10**
New Ambient Air Monitoring Network Deployment Deadline	1-1-13
Initial Area Designations	June 2012 or June 2013 if information deemed not sufficient by EPA
SIP Due Date	Within 18 months of effective date of area's designation as nonattainment
Attainment Date	No later than 5 years from effective date of nonattainment designation
EPA Contact at OAQPS	Dr. Michael J. Stewart Telephone: 919-541-7524 E-mail: stewart.michael@epa.gov

FACT SHEET
REVISIONS TO THE PRIMARY NATIONAL AMBIENT AIR QUALITY STANDARD, MONITORING NETWORK, and DATA REPORTING REQUIREMENTS for SULFUR DIOXIDE

SUMMARY OF ACTION

- On June 2, 2010, EPA strengthened the primary National Ambient Air Quality Standard (NAAQS) for sulfur dioxide (SO_2). The revised standard will improve public health protection, especially for children, the elderly, and people with asthma. These groups are susceptible to the health problems associated with breathing SO_2.

- EPA is revising the primary SO_2 standard by establishing a new 1-hour standard at a level of 75 parts per billion (ppb). EPA's evaluation of the scientific information and the risks posed by breathing SO_2 indicate that this new 1-hour standard will protect public health by reducing people's exposure to high short-term (5-minutes to 24-hours) concentrations of SO_2.

- The Agency is revoking the two existing primary standards of 140 ppb evaluated over 24-hours, and 30 ppb evaluated over an entire year because they will not add additional public health protection given a 1-hour standard at 75 ppb. Also, there is little health evidence to suggest an association between long-term exposure to SO_2 and health effects.

- EPA is not revising the secondary SO_2 NAAQS, set to protect public welfare (including effects on soil, water, visibility, wildlife, crops, vegetation, national monuments and buildings). EPA is assessing the need for changes to the secondary standard under a separate review.

- EPA estimates that the revised standard will yield health benefits valued between $13 billion and $33 billion, including reduced hospital admissions, emergency room visits, work days lost due to illness, and cases of aggravated asthma and chronic bronchitis, among other benefits.

- The revised SO_2 standard includes a new "form." The form is the air quality statistic that is compared to the level of the standard to determine if an area meets the standard. The new form is the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations.

- EPA is also revising the ambient air monitoring requirements for SO_2. States will need to make adjustments to the existing monitoring network in order to ensure that monitors meeting the network design regulations for the new 1-hour SO_2 standard are sited and operational by January 1, 2013.

- EPA is describing an anticipated approach for implementing the new 1-hour SO_2 standard

that would use monitoring and refined dispersion modeling of SO_2 sources to determine compliance with the new standard.

- This final rule also changes the Air Quality Index to include the revised SO_2 standard.

SO_2 AND PUBLIC HEALTH

- Current scientific evidence links health effects with short-term exposure to SO_2 ranging from 5-minutes to 24-hours. Adverse respiratory effects include narrowing of the airways which can cause difficulty breathing (bronchoconstriction) and increased asthma symptoms. These effects are particularly important for asthmatics during periods of faster or deeper breathing (e.g., while exercising or playing).

- Studies also show an association between short-term SO_2 exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses--particularly in at-risk populations including children, the elderly and asthmatics.

- EPA's National Ambient Air Quality Standard for SO_2 is designed to protect against exposure to the entire group of sulfur oxides (SO_x). SO_2 is the component of greatest concern and is used to represent the larger group of gaseous sulfur oxides. Other gaseous sulfur oxides (e.g., SO_3) are found in the atmosphere at concentrations much lower than SO_2.

- Emissions that lead to high concentrations of SO_2 generally also lead to the formation of other SO_x. Control measures that reduce SO_2 can generally be expected to reduce people's exposure to all gaseous SO_x. Reducing SO_2 emissions is expected to have the important co-benefit of reducing the formation of fine sulfate particles that pose significant public health threats.

- SO_x can react with other compounds in the atmosphere to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death. EPA's NAAQS for particulate matter are designed to provide protection against exposures that cause these health effects.

REVISING THE SO_2 MONITORING NETWORK

- In the final rule, EPA is requiring fewer monitors than proposed, because the Agency plans to use a hybrid approach combining air quality modeling and monitoring to determine compliance with the new SO_2 health standard.

- For a short-term 1-hour SO_2 standard, it is more technically appropriate, efficient, and effective to use modeling as the principal means of assessing compliance for medium to larger sources, and to rely more on monitoring for groups of smaller sources and sources not

as conducive to modeling. Such an approach is consistent with EPA's historical approach and longstanding guidance for SO_2.

- EPA is setting specific minimum requirements that inform states on where they are required to place SO_2 monitors. Approximately 163 SO_2 monitoring sites nationwide are required by this rulemaking.

- The final monitoring regulations require monitors to be placed in Core Based Statistical Areas (CBSAs) based on a population weighted emissions index for the area. The final rule requires:
  - 3 monitors in CBSAs with index values of 1,000,000 or more;
  - 2 monitors in CBSAs with index values less than 1,000,000 but greater than 100,000; and
  - 1 monitor in CBSAs with index values greater than 5,000.

- During 2009, approximately 470 SO_2 monitors were operating in the network. Some of these existing SO_2 monitors meet the siting requirements of this rule. EPA currently estimates that 41 new monitoring sites will need to be established, nationwide. States may, with EPA approval, relocate some of the existing SO_2 monitors.

- All newly sited SO_2 monitors must be operational by January 1, 2013.

- EPA is also making changes to data reporting requirements for SO_2. State and local agencies are required to report two data values for every hour of monitoring conducted:
  - the 1-hour average SO_2 concentration; and
  - the maximum 5-minute block average SO_2 concentration of each hour.

- EPA Regional Administrators have the authority to require additional monitoring in certain circumstances, such as in areas with SO_2 sources that are not conducive to modeling, areas with multiple SO_2 sources with overlapping plumes, or in areas with susceptible and vulnerable populations.

ANTICIPATED APPROACH TO IMPLEMENTING THE NEW SO_2 STANDARD

- In addition to revising the SO_2 primary standard and finalizing associated ambient air quality monitoring requirements, EPA is providing initial guidance on its plan for implementing the new 1-hour SO_2 standard.

- EPA plans to use refined dispersion modeling to determine if areas with sources that have the potential to cause or contribute to a violation of the new SO_2 standard can comply with the standard. Dispersion modeling simulates how air pollutants spread throughout the atmosphere and is used to estimate the concentration of air pollutants from sources such as industrial plants or highways.

- EPA intends to complete designations within two years of promulgation of the revised SO_2 standard (June 2012.)

- EPA anticipates initially designating areas based on 2008-2010 monitoring data, or refined dispersion modeling results if provided by the state. Areas which violate the standard would be designated as "nonattainment'. Areas that have both monitoring data and appropriate refined modeling results showing no violations would be designated as "attainment." All other areas would be designated as "unclassifiable."

- States with areas designated nonattainment in 2012 would need to submit state implementation plans (SIPs) to EPA by early 2014 outlining actions that will be taken to meet the standards as expeditiously as possible, but no later than August 2017.

- For all other areas, states would need to submit to EPA "maintenance" or infrastructure SIPs by June 2013, 3 years following the promulgation of the new SO_2 standard. EPA expects these state plans would:
  - demonstrate, through refined air quality modeling, that all sources contributing to monitored and modeled violations of the new standard, or that have the potential to cause or contribute to a violation, will be sufficiently controlled to ensure timely attainment and maintenance of the new SO_2 standard;
  - account for SO2 reductions that would result from compliance with national and regional regulations, including emissions controls for electric utilities and industrial boilers; and
  - include as necessary, enforceable emissions limitations, timetables for compliance, and appropriate testing/reporting to assure compliance.

  EPA believes that these areas should plan to demonstrate attainment and maintenance of the standard as expeditiously as possible, but no later than August 2017, the date nonattainment areas must meet the standard.

- EPA intends to issue guidance on conducting refined air quality dispersion modeling and implementing the new SO_2 standard. Examples of the issues that this guidance will address include how to translate the modeling results into a form appropriate for comparison to the new standard, and how to identify and appropriately assess the air quality impacts of SO_2 sources that may potentially cause or contribute to a violation of the new standard. EPA will provide an opportunity for public comment on the guidance before issuing it in final form.

- EPA will be making designations for all areas in the country, both for state lands and for Indian country. Unlike states, tribes are not obligated to submit designation recommendations but are invited to participate in the designations process by submitting a designation recommendation for Indian country and/or by engaging in formal or informal consultation with EPA and states.

- EPA also is finalizing a strategy for maintaining public health protection during the transition from the existing SO_2 standard to the revised SO_2 standard. In most areas, the 1-hour and annual SO_2 standards will remain in effect for 1-year after designations for the new 1-hour standard take effect. For areas currently designated nonattainment for SO_2 or with

unresolved issues relating to their plans to attain and maintain the standards, the existing standards will remain in effect until they submit and EPA approves a plan meeting the requirements of the new 1-hour standard.

- Areas that do not comply with the standard will likely use a combination of source-specific, statewide and national control measures to reduce SO_2 emissions.

BACKGROUND

- The Clean Air Act requires EPA to set national ambient air quality standards for especially widespread air pollutants listed by EPA, often called "criteria pollutants." Currently, sulfur oxides and five other major pollutants are criteria pollutants. The others are ozone, lead, carbon monoxide, nitrogen oxides, and particulate matter. The law also requires EPA to review the standards periodically and revise them if appropriate to ensure that they provide requisite health and environmental protection, and to update those standards as necessary.

- Sulfur dioxide is one of a group of highly reactive gasses known as "oxides of sulfur." The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore, and the burning of high–sulfur fuels by locomotives, large ships, and non-road equipment. SO_2 is linked with a number of adverse effects on the respiratory system.

- EPA first set NAAQS for SO_2 in 1971. EPA set a 24-hour primary standard at 140 ppb and an annual average standard at 30 ppb (to protect health). EPA also set a 3-hour average secondary standard at 500 ppb (to protect public welfare).

- The last review of the SO_2 NAAQS was completed in 1996 and the Agency chose not to revise the standards at that time.

- In the last review, EPA also considered, but did not set, a 5-minute SO_2 NAAQS to protect asthmatics at elevated ventilation rates from bronchoconstriction and other respiratory symptoms associated with 5-10 minute peak concentrations of SO_2.

- The decision not to set a 5-minute standard in 1996 was challenged successfully by the American Lung Association and remanded back to EPA in 1998; no formal action with regard to the remand has been taken until this final rule.

- Under a judicial consent decree, EPA completed this review of the primary SO_2 standard on June 2, 2010. The current review focuses only on the primary SO_2 standard. EPA is addressing the secondary standard for SO_2 as part of a separate review.

- Currently, there are several areas designated as nonattainment for the primary SO_2 NAAQS, although none of them currently exceeds the standards. There is also one area in Montana

that must revise its State Implementation Plan to address emissions that may be contributing to violations of the standard.

- This revised primary standard for SO_2 is consistent with the advice and recommendations of EPA's principal independent science advisors on National Ambient Air Quality Standards: the Clean Air Scientific Advisory Committee.

FOR MORE INFORMATION

- To download a copy of the final rule, go to EPA's Web site at: http://www.epa.gov/air/sulfurdioxide

- Today's rule and other background information are also available either electronically at http://www.regulations.gov, EPA's electronic public docket and comment system, or in hardcopy at the EPA Docket Center's Public Reading Room. (Docket ID No. EPA-HQ-OAR-2007-0352)

- The Public Reading Room is located in the EPA Headquarters, Room Number 3334 in the EPA West Building, located at 1301 Constitution Avenue, NW, Washington, DC. Hours of operation are 8:30 a.m. to 4:30 p.m. eastern standard time, Monday through Friday, excluding Federal holidays.

- Visitors are required to show photographic identification, pass through a metal detector, and sign the EPA visitor log. All visitor materials will be processed through an X-ray machine as well. Visitors will be provided a badge that must be visible at all times.

DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES
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SENT BY E-MAIL

June 2, 2011

David K. Paylor
Agency Director,
E-mail: David.paylor@deq.virginia.gov

Mike Dowd
Director, Air Quality
E-mail: Michael.dowd@deq.virginia.gov

Virginia Department of Environmental Quality
629 East Main Street
P.O. Box 1105
Richmond, VA 23218

RE: 1-Hour SO_2 NAAQS in Alexandria, Virginia

Dear Messrs. Paylor and Dowd:

I am writing to follow up on Sierra Club's letter addressed to the Virginia Department of Environmental Quality (DEQ) dated May 13, 2011, regarding the Sierra Club's air dispersion modeling study of the GenOn Potomac River Generating Station (PRGS) in Alexandria. In this letter, the Sierra Club presented results of its modeling study which show "significant exceedances of the 1-hour SO_2 NAAQS in Washington D.C., Maryland, and Virginia". The report also indicates "exceedances are very high in the immediate vicinity of the plant".

Since the continuing compliance of GenOn PRGS, presently and in future, with all NAAQS are of paramount importance to the City of Alexandria and its residents, the City would like to request that your agency carry out an air quality modeling study to verify the results obtained by Sierra Club. Also, the City requests that DEQ take these results into account in its recommendations to the EPA on the initial area designations for the Northern Virginia region, as part of the implementation process for this 1-hour SO_2 NAAQS. Finally, the City requests that DEQ incorporate a public process to facilitate obtaining input from concerned stakeholders on the agency's recommendations to the

EPA. The City intends to carry out a similar air quality analysis concerning GenOn PRGS and will share the results with your agency and the EPA.

The City of Alexandria appreciates DEQ's continued efforts in enhancing environmental and public health protection in the Northern Virginia region. If you have any questions concerning this letter, I can be reached at 703-746-4073.

Sincerely,

William J. Skrabak

William J. Skrabak
Deputy Director, Department of Transportation & Environmental Services
Office of Environmental Quality

Copies: Cristina Fernandez, Associate Director, EPA Region III
David Cramer, Director, Environmental Policy, GenOn
Bruce Johnson, Acting City Manager
Mark Jinks, Deputy City Manager
Michele Evans, Deputy City Manager
Christopher Spera, Deputy City Attorney
Richard Baier, Director, T&ES
MCMG Members
John Britton, City Counsel

GenOn
Potomac River, LLC

GenOn Potomac River, LLC
8301 Professional Place, Suite 230
Landover, MD 20785

June 2, 2011

Mr. Michael Dowd
Director, Air Quality Division
Virginia Department of Environmental Quality
629 East Main St.
Richmond, VA 23240

Re: Ambient SO2 Monitoring Data at GenOn's Potomac River Station

Dear Mr. Dowd:

It has come to our attention that some air dispersion modeling of our Potomac River Station has recently been conducted by a third party, and claims were made that the SO2 NAAQS is being violated nearby the plant. GenOn has not reviewed the modeling, but wanted to share with DEQ the results of an ambient SO2 monitoring program that GenOn commissioned using monitors placed around the Potomac River facility. These monitors were originally used in the development of our current operating permit and continued in service through May 2010.

The monitors used in this study were installed, maintained, operated, and quality assured by a respected third party contractor, AECOM. The monitors underwent daily calibration checks, bi-weekly calibrations, and quarterly monitor audits to ensure data validity.

The monitors were placed in locations where maximum SO2 concentrations were expected to be found, based on a dispersion modeling analysis completed under a DEQ-approved modeling protocol in August 2005. A total of six monitors were employed during the course of the study. Three of the monitors were placed on rooftops of hotels or high-rise condominium buildings; therefore the monitors collected "higher than ambient" SO2 readings, as ambient monitors are typically placed in public spaces at ground level.

Despite the worst-case monitor locations and elevated positioning, the monitoring data show the Potomac River facility is not causing violations of the June 2010 1-hr SO2 NAAQS. A review of the monitored data between August 2008, when the facility received a new operating permit with stringent SO2 limits, and May 2010, when the monitoring program ended, shows SO2 concentrations below the 197 ug/m3 1-hr SO2 standard.

Location	99th Percentile Value After July 2008 Permit Issued (August 2008 – May 2010)	99th Percentile Value After Stack Merge Completed (March 2009 – May 2010)
Marina Towers Central	145.5 ug/m3	105.2 ug/m3
Marina Towers South	106.6 ug/m3	88.3 ug/m3
South East Site	107.1 ug/m3	103.2 ug/m3

NOTE: New 1-hr SO2 NAAQS Standard = 197 ug/m3

The compliance with the standard was calculated by taking the highest 1-hour value each day then averaging the 99th percentile annual values (the 4th highest daily maximum per year) for three years of data. These three values are then averaged together. We do not have three years of monitoring data on hand, as our monitoring program

ended in May 2010. However, we do have a total of 22 months of data since the July 31, 2008 permit went into effect, and 15 months of data since our stack merge project was completed, which is the current operating configuration of the plant. Three monitoring sites listed in the table above were active for the entire period.

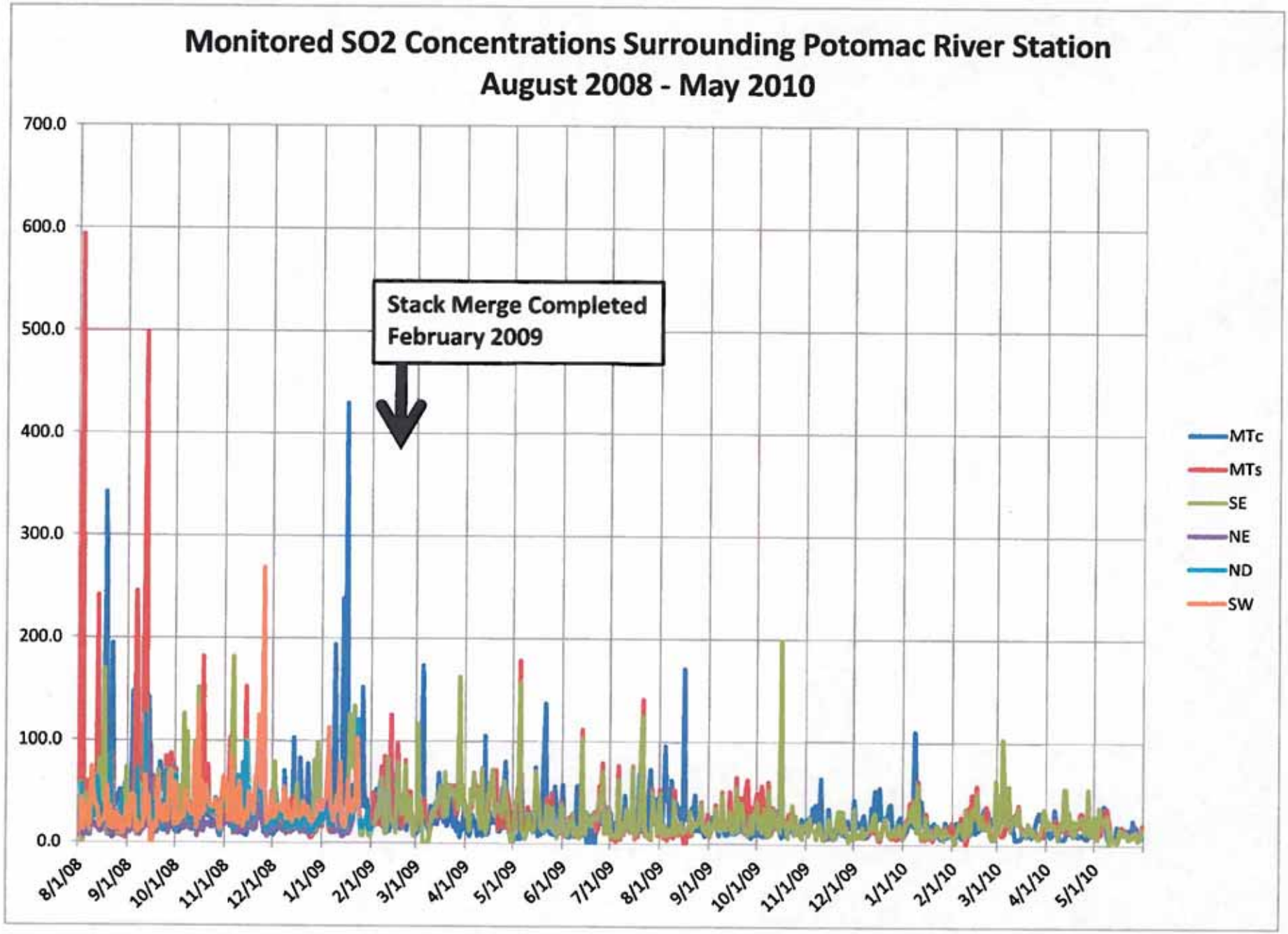
The new 1-hr SO2 standard is significantly more stringent than the 24 hr standard it replaces, however the monitoring data show the new 1-hr SO2 standard is not being exceeded nearby the Potomac River station, therefore the facility is not causing any SO2 exceedances.

GenOn believes it is premature to evaluate individual sources against the new 1-hr SO2 standard, as guidance from EPA on how modeling of existing sources should be conducted and how monitoring data are to be used in the attainment demonstration process has yet to be issued. If you have questions on the data we present in this letter, please contact me at david.cramer@genon.com or at 301-955-9168. Thank you.

Sincerely,

David S. Cramer
Director of Environmental Policy
GenOn Eastern PJM

Cc: Michael Kiss
Walter Stone
Chuck Oliver


Monitored SO2 Concentrations Surrounding Potomac River Station
August 2008 - May 2010
Stack Merge Completed
February 2009
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
8/1/08
9/1/08
10/1/08
11/1/08
12/1/08
1/1/09
2/1/09
3/1/09
4/1/09
5/1/09
6/1/09
7/1/09
8/1/09
9/1/09
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SIERRA CLUB
FOUNDED 1892

Via Electronic Mail and U.S. Mail

May 13, 2011

David K. Paylor
Agency Director
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Mike Dowd
Director, Air Quality
Virginia Department of Environmental Quality
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P.O. Box 1105
Richmond, VA 23218
michael.dowd@deq.virginia.gov

RE: Potomac River Generating Station

Dear Agency Director Paylor and Director of Air Quality Dowd:

The Sierra Club retained an engineer, Steve Klafka, P.E., B.C.E.E., of Wingra Engineering, to conduct air dispersion modeling for the Potomac River Generating Station ("PRGS") in Alexandria, Virginia, evaluating PRGS's emissions of SO2. The results, reflected in the attached report, show significant exceedences of the 1-Hour SO2 NAAQS in Washington, D.C., Maryland, and Virginia. Also attached are the modeling files themselves. As the table on page one of the report indicates, exceedences are very high in the immediate vicinity of the plant, reaching over 1200 ppb.

As you are aware, Virginia must make proposals to the Environmental Protection Agency in June regarding whether areas within each jurisdiction should be designated as attainment,

nonattainment, or unclassified with respect to the 1 Hour SO2 NAAQS. PRGS's emissions necessarily require that Alexandria, Virginia and surrounding areas be designated as non-attainment for the 1-Hour SO2 NAAQS, unless PRGS repowers, implements necessary additional pollution controls or shuts down.

If you have any questions about this data, please feel free to call. Otherwise, I hope that you find this information helpful and I look forward to discussing it with you in the near future.

Sincerely,

Zacie Fabish

Joshua R. Stebbins
Zachary M. Fabish
The Sierra Club
408 C Street NE
Washington, DC 20002
josh.stebbins@sierraclub.org
zachary.fabish@sierraclub.org
(202) 675 6273
(202) 675 7917

enclosures

cc via electronic mail:
Director William Skrabak, City of Alexandria Office of Environmental Quality

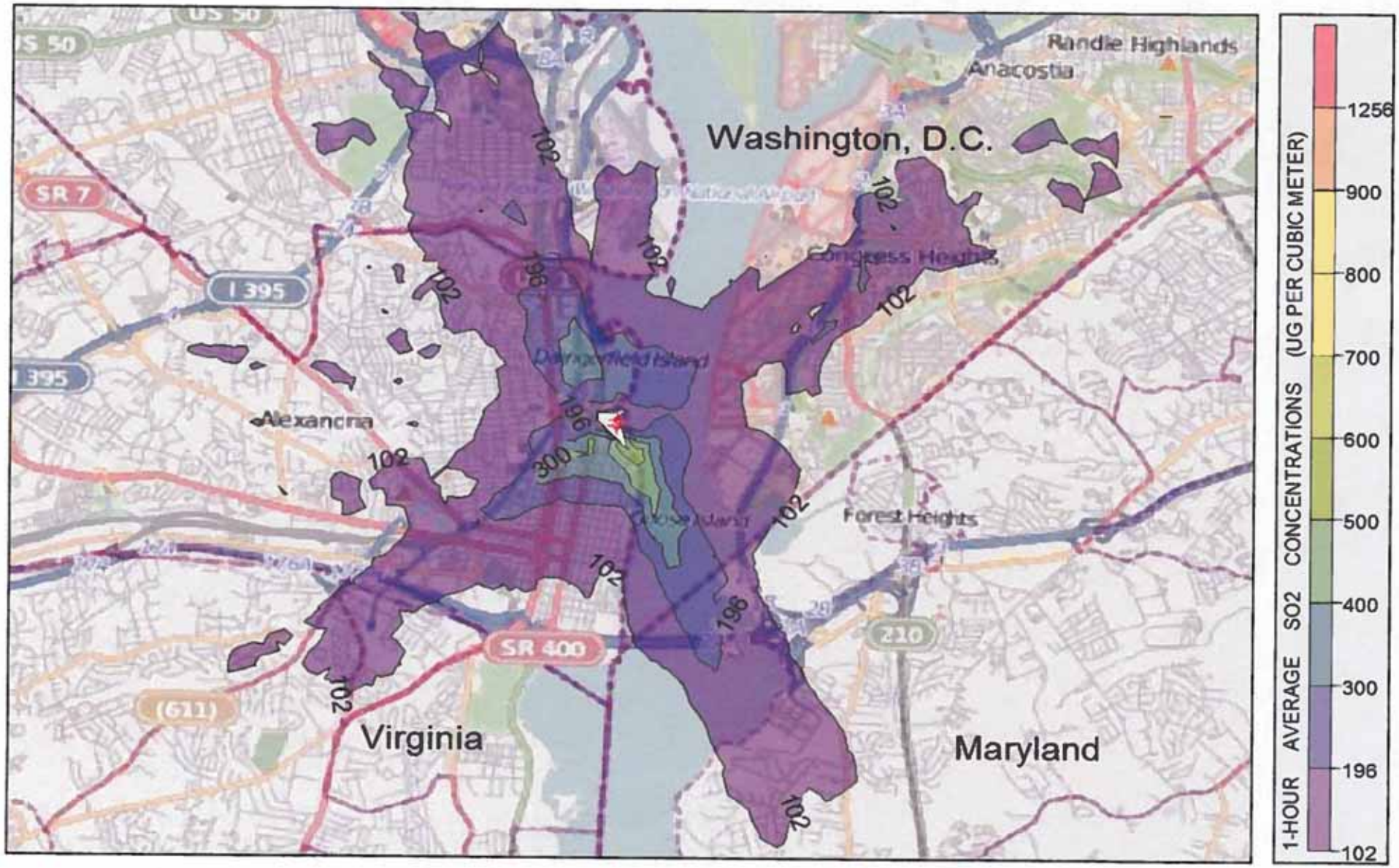
Evaluation of Compliance with the SO2 1-hour Average NAAQS - Mirant Potomac River LLC, Alexandria City, Virgina - May 9, 2011

Location	Emission Rates	Averaging Period	Impact 99th Percentile 1-hour Daily Max (ug/m3)	Background 99th Percentile 1-hour Daily Max (ug/m3)	Total 99th Percentile 1-hour Daily Max (ug/m3)	NAAQS 99th Percentile 1-hour Daily Max (ug/m3)	Complies with NAAQS?
Washington, D.C.	Maximum	1-hour	606	94	700	196	No
	Allowable	1-hour	462	94	556	196	No
Virginia	Maximum	1-hour	1256	94	1350	196	No
	Allowable	1-hour	958	94	1052	196	No
Maryland	Maximum	1-hour	283	94	377	196	No
	Allowable	1-hour	226	94	320	196	No

Unit ID	Stack ID	Maximum Emissions 1-hour Average (lbs/hr)	Allowable Emissions 3-hour Average (lbs/hr)
Unit 1	MS1	515.8	
Unit 2		565.5	
Stack Total		**1,081.3**	**737.1**
Unit 3		456.9	
Unit 4	MS4	452.5	
Unit 5		491.3	
Stack Total		**1,400.8**	**1,168.9**
Facility Total	Total	2,482.1	1,906.0

NOTES

Procedures	USEPA, Area Designations for the 2010 Revised Primary SO2 NAAQS, Attachment C, Modeling Guidance for SO2 NAAQS Designations, March 24, 2011.
Files	AERMOD modeling files from VADEQ Technical Review of the Air Quality Analyses December 21, 2007.
Conditions	All boilers were assumed to operate at capacity for 24 hours per day.
Meteorological Data	Ronald Reagan National Airport, 2001 to 2006, no data for 2002.
	Meteorological data are not processed with AERMINUTE which may result in the prediction of higher concentrations.
Allowable Emissions	Current limitations are taken from Stationary Source Permit to Operate for Mirant Potomac River LLC, Registration No. 70228, Page 12, July 31, 2008.
	Current limitations are 3-hour average limits. Total both stacks is 1,906.0 lbs/hr, MS4 limit is 1,168.9 lbs/hr, and MS1 limit by difference is 737.1 lbs/hr.
Maximum Emissions	Maximum emission rates based on peak hourly rates for each boiler reported for 2010 in USEPA, Clean Air Markets - Data and Maps.
Background	Design value for Washington, D.C. from 2007-2009 obtained from: http://www.epa.gov/airtrends/values.html
	The facility impact does not include off-site sources which may increase the predicted concentrations.



NOTE: All colored areas represent a violation of the National Ambient Air Quality Standard for Sulfur Dioxide.

GenOn

Potomac River, LLC

1400 North Royal St.
Alexandria, VA 22314

April 13, 2011

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

Re: Form 7 Application for Alternative Sorbent
Potomac River Generating Station

Dear Mr. Darton:

The current state operating permit (the "Permit") issued to GenOn's Potomac River Generating Station ("PRGS") requires the use of a sorbent injection system to aid in controlling SO_2 emissions. As discussed in more detail below, the permit authorizes the use of sodium sesquicarbonate ("Trona") in that sorbent system, and requires submittal of a Form 7 application, or equivalent, to enable use of an alternate sorbent material. GenOn has been working with the Northern Regional Office staff since 2008 regarding the testing and permitting for use of an alternate sorbent. This letter transmits a Form 7 application for use of an alternate sorbent, Sodium Bicarbonate ("SBC"), and GenOn's perspective on the applicable permitting analysis. Based on this letter and the supporting emission data, use of an alternate sorbent can be approved through a minor modification. *See* 9 VAC 5-80-980.

Background

PRGS operates pursuant to a state operating permit issued on July 31, 2008. The permit requires the use of a dry sorbent injection to control SO_2 emissions. Permit Condition 5. The permit references sodium sesquicarbonate as the sorbent to be used. The permit states that, "should an alternate dry sorbent strategy be developed in the future, the permittee shall submit a Form 7 application, or equivalent, to request an amendment to this permit." *Id.* The permit also outlines the testing and evaluation required for use of an alternate dry sorbent. Permit Condition 6. The permit does not specify the type of amendment required.

GenOn is now seeking approval to use an alternate sorbent, sodium bicarbonate ("SBC"), also known as baking soda. In coordination with DEQ, GenOn tested SBC extensively in 2008, prior to the stack merge project authorized by the permit. At the request of DEQ, GenOn conducted additional testing of SBC after the stack merge project was completed. GenOn recently completed another round of testing on Stack 4 but the results are not in yet. DEQ has been notified of this testing and has approved the test protocol in accordance with the terms of

the permit. GenOn provided DEQ with a description of the chemical properties of SBC, as well as information available in the public sector about SBC on May 22, 2009, as specified under Condition #6 of the operating permit. This information was resent electronically on February 14, 2011. GenOn is submitting an application for a minor modification to its permit to allow the use of SBC as a sorbent for SO_2 control.

A Minor Permit Modification is Required

To use SBC rather than Trona as the sorbent at PRGS requires a minor permit amendment. It is not a major modification and therefore major New Source Review ("NSR") is not required. Major NSR is triggered by a major modification, defined as a physical change or change in the method of operation, that results in both a net increase in emissions from the unit and a net significant increase in emissions from the source as a whole. Changing sorbents from Trona to SBC is not a modification because it is neither a physical change nor a change in the method of operation. Additionally, changing sorbents will not result in any increase in emissions. Accordingly, major NSR does not apply to this change.

(1) Switching Sorbents Is Not a Physical Change or Change in the Method of Operation

The initial test for determining whether the Virginia NSR regulations apply is to determine whether a physical change or change in the method of operation has occurred. 9 VAC 5-80-1110; 9 VAC 5-80-1615. A change in the type of sorbent used at PRGS is not a physical change or change in the method of operation. There will not be any physical change to the facility necessary for SBC to be used. The existing equipment used for Trona will be used to inject SBC and capture and dispose of the resulting fly ash material. The facility already uses sorbent to aid in controlling SO_2 emissions; a change in the type of sorbent is not a change in the method of operation, but rather a substitution of the sorbent used. SBC and Trona have similar properties both chemically and physically. SBC will be used in the same process, for the same purpose, as Trona.

(2) Switching Sorbents Will Not Result in Any Increase in Emissions

Even if the use of an alternate sorbent was a physical change or change in the method of operation, major NSR permitting requirements are not triggered because the change in sorbent will not result in an increase in emissions.

(a) Baseline Actual Emissions vs. Projected Actual Emissions

Under Virginia's major NSR program, the baseline actual emissions are compared to the future projected actual emissions to determine whether a significant increase in emissions will occur for projects involving existing emission units. 9 VAC 5-80-1605.

There are two approaches to calculating past actual to future projected actual emissions. The first recognizes that the facility has recently completed a project to merge the five stacks into two stacks at the facility. Although it is an existing emission source, one could argue there is insufficient emission data to establish a two year baseline under "normal operations." Under this

approach, the appropriate emission comparison would be the existing potential to emit to the future potential to emit. 9 VAC 5-80-1615 (definition of "actual emissions").

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. *Id.* The only pollutants impacted by the change in sorbent would be SO_2 and acid gases (the parameters the sorbent injection control system is designed to reduce), and particulate matter[1]. GenOn notes that the City of Alexandria has been concerned in the past about the possibility of particulate emissions resulting from the use of sorbent. Changing from Trona to SBC would in fact reduce the volume of ash generated and therefore reduce fugitive emissions.

Because SO_2 emissions are now restricted by an annual tonnage cap of 3,813 tons established in the Consent Decree, this federally enforceable limitation serves as the existing potential to emit. This is consistent with Virginia regulations, which provide that a legal restriction on annual SO_2 emissions limits what would otherwise be the baseline actual emissions of SO2. 9 VAC 5-80-1615 (definition of "actual emissions"). Likewise, the projected potential to emit would be the 3,813 tons because this is the federally enforceable limitation on the facility's emissions. 9 VAC 5-80-1615 (definition of "potential to emit"). Because the existing potential to emit and future potential to emit are the same, the change in sorbent will not trigger an increase in emissions.

The second approach compares a past actual emissions baseline period that pre-dates the stack merge to future projected actual emissions. Under this approach, the years 2006-07 were selected as the most representative baseline operating period in the past five years. The sorbent injection systems were in place and annual emissions were below the current July 2008 operating permit limits. An emissions calculation worksheet attached below (Worksheet #1) demonstrates that future projected actual emissions do not exceed past actual 2006-07 emissions as a result of the change in sorbents, therefore there is no emissions increase and there is no major modification.

(b) Reasonable Possibility

As noted above, because there is no change in emissions, there is not a reasonable possibility that the emissions will increase. Under Virginia's implementation of the 2002 NSR rules, GenOn must determine whether there is a "reasonable possibility" that a significant emissions increase may result from the Project. *See* 40 C.F.R. 52.21(r)(6); *see also* 9 VAC 5-80-1785; 9 VAC 5-80-2091. The EPA has published a final rule that defines how to make a "reasonable possibility" determination. 72 Fed. Reg. 72607 (Dec. 21, 2007). Under this rule, EPA chose a "percentage increase trigger" option, under which there is a reasonable possibility that a "change would result in a significant emissions increase if the projected increase of emissions of a pollutant...equaled or exceeded 50 percent of the applicable NSR significance

[1] NOx emissions were not compared in the analysis because injection of an SO_2 control sorbent does not affect NOx emissions. Changing SO_2 sorbents will therefore have no affect on NOx emissions either.

level for that pollutant."[2] Under the EPA's new rule, in performing a "reasonable possibility" analysis, a source cannot exclude emissions increases related to independent factors, such as demand.

Based on the above, there certainly is not a reasonable possibility that a 20 ton per year emission increase (*i.e.*, 50% of the increase in SO_2 significance level of 40 tons per year) would occur from the change in sorbent.

Changing Sorbent Will Not Trigger Minor NSR

(a) Use of an Alternative Raw Material Does not Trigger Minor NSR

In addition to the argument discussed above about changing sorbent not being a physical change, Virginia's Minor NSR program also provides that the use of an alternative fuel or raw material is not a modification if the source was designed to accommodate that alternative material. 9 VAC 5-80-1110 (definition of "modification"). The sorbent injection system was designed to accommodate any sorbent material. No modifications to the system are necessary to enable the use of SBC instead of Trona. The replacement of one sorbent with another is in effect a change in raw materials, and use of the sorbent is a required measure to reduce SO_2 emissions.

Additionally, the regulations provide that the replacement of any system or device whose primary function is the reduction of air pollutants (unless replaced with one that is less efficient) is not considered a modification. *Id.* Although the pollution control project exclusion was stricken from the federal NSR program and, as a result, from Virginia's major NSR regulations, this exemption remains viable in the minor NSR context. Virginia's minor NSR program is a state-only program and as a result can continue to include the pollution control project exemption.

(b) Change in Emissions

Under the current Virginia minor NSR regulations, a modification is defined as "any physical change in, change in the method of operation of, or addition to, a stationary source that would result in a net emissions increase of any regulated air pollutant emitted into the atmosphere by the source . . ." (with certain listed exclusions from the definition). 9 VAC 5-80-1110. The definition of net emission increase was amended in 2008 and is now defined as: (i) any increase in the uncontrolled emission rate from a particular physical change or change in the

---

[2] 72 Fed. Reg. 72607, at 72609. The final rule includes recordkeeping requirements. Required pre-change records include a description of the project, identification of the units that will be affected, a description of the applicability test used, and netting calculations (if applicable). In relation to the applicability test, a source must record the baseline actual emissions, projected actual emissions and the emissions excluded due to demand growth with an explanation as to why they were excluded. The post-change recordkeeping requirement entails monitoring emissions of those regulated NSR pollutants for which there was a reasonable possibility of a significant emissions increase and calculating and maintaining records of the annual emissions for 5 (or 10) years. *See* 52.21(r)(6)(i) and (iii).

method of operation at a stationary source and (ii) any other increases or decreases in the uncontrolled emission rate at the source that are concurrent with the particular change 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.

The uncontrolled emission rate means the emission rate from an emissions unit when operated at maximum capacity without air pollution control equipment. Air pollution control equipment includes control equipment that is not vital to its operation, except that its use enables the owner to conform to applicable air pollution control laws and regulations. Annual uncontrolled emissions shall be based on the maximum annual rated capacity (based on 8,760 hours of operation per year) of the emissions unit, unless the emissions unit or stationary source is subject to state and federally enforceable permit conditions that limit the annual hours of operation. Enforceable permit conditions on the type or amount of material combusted, stored or processed may be used to determine the uncontrolled emission rate of an emissions unit or stationary source. 9 VAC 5-80-1110. Using this definition, the uncontrolled emission rate at PRGS would exclude pollution control devices such as the precipitators or SO2 sorbent injection system, therefore changing the sorbent would not change the uncontrolled emission rate.

To demonstrate that current stack emissions with Trona would not increase if SBC is used, Worksheets #2 and #3 are attached below. Worksheet #2 compiles 'existing' emission rates measured when injecting Trona and 'new' emission rates measured during SBC tests. All valid post-stack merge data available were included in this analysis. Average emission rates for each pollutant are calculated for each stack and sorbent. In Worksheet #3, the 'existing' and 'new' emission rate averages were each multiplied by the 2006-07 baseline heat input to calculate the change in facility annual emission tonnages. Annual emissions of each pollutant decreased, therefore minor NSR permitting is not triggered.

Minor Modification Process

Minor permit modification procedures apply to permit modifications that do not violate any applicable requirement, do not involve significant changes to existing monitoring, reporting or recordkeeping requirements, do not require or change a case-by-case determination of an emission limitation, do not change a permit condition designed to avoid an applicable federal requirement, are not Title I modifications and are not required to be processed as a significant modification.

The change in sorbent will not require a change to any permit limit, monitoring, reporting or recordkeeping requirements. The only change that would be required would be to amend Condition 5 to reference both sodium sesquicarbonate and SBC. Accordingly, this change can be made as a minor permit modification.

Conclusion

Whether NSR permitting requirements are triggered depends on two elements: (1) whether or not there is a physical change or change in the method of operation and (2) whether that change will result in an increase in emissions and if so by how much. As outlined above,

neither of these conditions are met. Accordingly, neither major nor minor permitting requirements are triggered and the use of an alternate sorbent can be implemented through a minor permit modification.

The PRGS permit already requires use of a dry sorbent to control SO_2 emissions. SBC is equally effective as Trona, and does not result in any increase in emissions. GenOn is very familiar with the use of SBC, and based on stack testing SBC and Trona are equivalent materials. No physical change to the facility is required to allow the use of SBC, and there would be no changes to facility recordkeeping, reporting or monitoring requirements. Accordingly, GenOn's request to use SBC as an alternate sorbent should be processed as a minor permit modification.

Other Amendments to Permit Requested

A permit modification is necessary to clarify the purpose of the PM CEMs installed in 2009. GenOn is willing to continue to work with the PM CEMs, but the permit should recognize the inherent technological issues associated with use of the CEMs and specify that the data generated by the PM CEMs will not be used for compliance purposes and only limited reporting is required. Details of the technical issues with the PM CEMs were discussed in GenOn's Consent Order response letter to Sarah Baker on April 1, 2011. These changes will affect conditions 14, 19, 40, 41, and 42 of the current state operating permit.

While the permit is being amended, there are other provisions of the permit which need to be updated or modified:

- New #2 fuel oil sampling procedure, Condition #27
- CEMs diluent correction factor, Condition #18
- Precipitator condition assessment, Condition #21 and Condition #14

We look forward to working with you to expeditiously amend the permit. Thank you for your time and consideration.

Sincerely,

David S. Cramer

David S. Cramer
GenOn Potomac River. LLC

Worksheet 1

Potomac River Generating Station - Comparing Past Emissions to Future Emissions

Major NSR Evaluation - Past Actual Facility Tons/Yr and Projected Future Facility Tons/Yr

1.) PAST ACTUALS - Review 2 of last 5 years operation

Pollutant	2006	2007	HISTORICAL AVGs
Heat Input (MBtu/yr)	13,572,943	17,310,438	15,441,691
SO2 (Tons/yr)	3,178	3,748	3,463
PM (Tons/yr)	224	286	255
PM10 (Tons/yr)	120	153	137
PM2.5 (Tons/yr)	86.2	107.5	96.9
HCl (Tons/yr)	8.1	10.4	9.3
HF (Tons/yr)	4.7	6.0	5.4

2.) FUTURE EMISSIONS: Past Heat Input x Future Emission Rate

(Using SBC Test Data on a stack-by-stack basis)

Pollutant	Stack 1 Rate (lb/MBtu)	Stack 1 Heat Input	Stack 4 Rate (lb/MBtu)	Stack 4 Heat Input	Facility Total Tons
SO2	0.234	4,481,949	0.196	10,959,743	1,598.4
PM	0.0230	4,481,949	0.0098	10,959,743	105.2
PM10	0.0109	4,481,949	0.0077	10,959,743	66.6
PM2.5	0.0096	4,481,949	0.0069	10,959,743	59.3
HCl	0.0029	4,481,949	0.0005	10,959,743	9.2
HF	0.0009	4,481,949	0.0002	10,959,743	3.0

3.) TEST #1: Are Future Emissions > Past Actuals?

Pollutant	Past Tons	Future Tons	Difference	
SO2	3,463	1,598.4	(1,864.6)	no
PM	255.0	105.2	(149.8)	no
PM10	137.0	66.6	(70.4)	no
PM2.5	96.9	59.3	(37.6)	no
HCl	9.3	9.2	(0.1)	no
HF	5.4	3.0	(2.4)	no

4.) TEST #2: Do Future Emissions Exceed any Annual Permit Limits?

Pollutant	Permit Tons	Future Tons	Difference	
SO2	3,813	1,598.4	(2,214.6)	no
PM	562	105.2	(456.8)	no
PM10	325	66.6	(258.4)	no
PM2.5	207	59.3	(147.7)	no
HCl	100	9.2	(90.8)	no
HF	36.22	3.0	(33.2)	no

Heat Input Apportionment: Units 1&2 vs. Units 3-5

MBtu	2006	2007	Avg
Stack 1	3,438,478	5,525,420	4,481,949
Stack 4	10,134,465	11,785,021	10,959,743
		Total:	15,441,692

Worksheet 2

Potomac River Generating Station - Comparison of Emission Rates from Trona and Sodium Bicarbonate

Minor NSR Evaluation: Emission Rate Averages from Post-Stack Merge Tests (2009 - 2010)

	STACK 1					
	Trona			SBC		
Pollutant	Test Date	Test Result lb/Mbtu	Average lb/Mbtu	Test Date	Test Result lb/Mbtu	Average lb/Mbtu
PM	7/14/09 9/1/10	0.0190 0.0280	0.0235	7/15/10 8/20/10	0.0170 0.0290	0.0230
PM10	9/25/09 9/1/10	0.0080 0.0276	0.0178	8/20/10	0.0109	0.0109
PM2.5	9/25/09 9/1/10	0.0066 0.0158	0.0112	8/20/10	0.0096	0.0096
HCl	7/14/09 9/1/10	0.0015 0.0029	0.0022	7/15/10 8/20/10	0.0010 0.0048	0.0029
HF	7/14/09 9/1/10	0.0006 0.0012	0.0009	7/15/10 8/20/10	0.0006 0.0011	0.00085
SO2	7/14/09 9/25/09 9/1/10	0.233 0.239 0.252	0.241	7/15/10 8/20/10	0.241 0.227	0.234

Stack 1 Notes:

- The Method 27 test on Trona 7/14/09 was a failed test and was not included in the PM10 and PM2.5 averages. The Method 5 test on the same date was acceptable, therefore it was included in the PM average.

- HCl and HF samples collected 7/14/09 on Trona were acceptable, therefore addititonal samples were not collected on 9/25/09 during the M27/28 retest.

- The Method 28 (condensables) portion of the M27/28 test on SBC 7/15/10 was anomolous and not included in the PM10 and PM2.5 averages. A lab error was suspected. A good M28 sample was collected with the M5 test and was included for averaging purposes.

	STACK 4					
	Trona			SBC		
Pollutant	Test Date	Test Result lb/Mbtu	Average lb/Mbtu	Test Date	Test Result lb/Mbtu	Average lb/Mbtu
PM	4/29/09 6/19/09 7/27/10	0.0093 0.0137 0.0069	0.0100	7/17/10	0.0098	0.0098
PM10	4/29/09 6/19/09 7/27/10	0.0115 0.0136 0.0059	0.0103	7/17/10	0.0077	0.0077
PM2.5	4/29/09 6/19/09 7/27/10	0.0098 0.0127 0.0054	0.0093	7/17/10	0.0069	0.0069
HCl	4/29/09 6/19/09 7/27/10	0.0030 0.0004 0.0004	0.0013	7/17/10	0.0005	0.0005
HF	4/29/09 6/19/09 7/27/10	0.0022 0.0005 0.0005	0.0011	7/17/10	0.0002	0.0002
SO2	4/29/09 6/19/09 7/27/10	0.205 0.226 0.271	0.234	7/17/10	0.196	0.196

Stack 4 Notes:

- SBC testing conducted on 7/17/10 was just below the required MW load. On 9/2/10, a 4th run was conducted for all pollutants at higher load, at the request of VA DEQ.

Worksheet 3

Potomac River Generating Station - Change in Annual Facility Emissions (Tons/yr)

Minor NSR Evaluation: Annual Facility Emissions, Post-Stack Merge Tests (2009 - 2010)

Baseline Period Heat Input		
2006	13,572,943	MBtu
2007	17,310,438	MBtu
Average	15,441,691	MBtu

Heat Input Apportionment	
Stack 1	Stack 4
29.0%	71.0%
4,481,951	10,959,740

SO2	Stack 1	Stack 4	Total
Trona (lb/Mbtu)	0.241	0.234	
SBC (lb/Mbtu)	0.234	0.196	
Difference	-0.007	-0.038	
Tons (+/-)	(15.7)	(208.2)	(223.9)

PM	Stack 1	Stack 4	Total
Trona (lb/Mbtu)	0.0235	0.0100	
SBC (lb/Mbtu)	0.0230	0.0098	
Difference	-0.0005	-0.0002	
Tons (+/-)	(1.1)	(1.1)	(2.2)

HCl	Stack 1	Stack 4	Total
Trona (lb/Mbtu)	0.0022	0.0013	
SBC (lb/Mbtu)	0.0029	0.0005	
Difference	0.0007	-0.0008	
Tons (+/-)	1.6	(4.4)	(2.8)

PM10	Stack 1	Stack 4	Total
Trona (lb/Mbtu)	0.0178	0.0103	
SBC (lb/Mbtu)	0.0109	0.0077	
Difference	-0.0069	-0.0026	
Tons (+/-)	(15.5)	(14.2)	(29.7)

HF	Stack 1	Stack 4	Total
Trona (lb/Mbtu)	0.0009	0.0011	
SBC (lb/Mbtu)	0.00085	0.0002	
Difference	-0.0001	-0.0009	
Tons (+/-)	(0.1)	(4.9)	(5.0)

PM2.5	Stack 1	Stack 4	Total
Trona (lb/Mbtu)	0.0112	0.0093	
SBC (lb/Mbtu)	0.0096	0.0069	
Difference	-0.0016	-0.0024	
Tons (+/-)	(3.6)	(13.2)	(16.7)

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