

Virginia Air Pollution Control Board

March 26, 2007

By

City of Alexandria



City of Alexandria

Major Issues & Concerns

- Need for comprehensive operating permit (option “1+”)
- VDEQ proposed consent order (options 2 & 3)
- Mirant’s proposed stack merge project
- Need for PM_{2.5} modeling and compliance
- Use of operating periods for establishing baseline emissions that exceeded NAAQS
- Establishment of local air pollution control district



Comprehensive Operating Permit (Option “1+”)

- Comprehensive permit must address or include:
 - NAAQS compliance including PM_{2.5} (including CEMS)
 - Discrete emission limits both short and long-term for each pollutant
 - Evaluate NSR issues
 - Stack merger (using NAAQS compliant baseline)
 - Trona
 - Use of LNB and SOFA for increased CO emissions
 - Other physical changes at the plant
 - Emissions during start-up and shut-down periods included in annual limits
 - Fugitive emissions
 - Evaluate emissions against VA Toxics Regulations



PM_{2.5} Modeling and Compliance

- There is no dispute that PM_{2.5} affects human health
 - Linked to cardiovascular disease and premature death
 - PRGS is a major source of PM_{2.5} in Northern Virginia
- Northern Virginia is a non-attainment area for PM_{2.5}
- Local population exposed to higher levels of PM_{2.5} as a result of downwash from PRGS



PM_{2.5} Modeling and Compliance

- There is neither a regulatory nor a technical reason to delay modeling of PRGS PM_{2.5} emission
- Use of trona is conducive to increased PM_{2.5} emission
 - At full production (482 MW) and 60% SO₂ removal, trona usage is in excess of 200 tons per day
 - Trona T200 used at PRGS contains 10% by weight (or 20 tons per day) less than 6 microns
 - Expected increase in fugitive emissions. Trona use is estimated to increase the amount of ash handling by approx. 50%



Other Trona Related Concerns

- Under EPA's present ACO, plant relies heavily on varying usage of trona for SO₂ compliance
 - Health impacts of trona have not been evaluated
 - Unprecedented use of trona (at this scale) without adequate study and safeguards
 - Boiler ash produced at PRGS during trona use was found to be much more corrosive and have higher pH and alkalinity (see DOE's SEA)



City's Opposition to VDEQ Proposed Consent Order (Options 2 & 3)

- VDEQ proposed Consent Order that adopts daily predictive modeling is
 - Illegal
 - Technically flawed, and
 - Unnecessary



City's Opposition to VDEQ Proposed Consent Order (Options 2 & 3)

- In the interim, pending the issuance of a comprehensive permit:
 - VDEQ's 2004 Downwash Study Consent Order and the Director's August 19, 2005 letter on behalf of the SAPCB (Board) to Mirant are still in effect
 - Mirant proposal of "three boiler operating scenarios" (Table 1 of EPA's ACO) to both VDEQ and EPA should become basis of operation in the interim



City's Opposition to VDEQ Proposed Consent Order (Options 2 & 3)

- Mirant has requested a new VDEQ Consent Order similar to EPA's current ACO pending a stack merge permit or SOP
- Alexandria agrees that permitting process should not be compromised by time pressure
- However, the City strongly **opposes** provisions of current ACO or issuance of any order that allows Mirant to continue to operate under daily predictive modeling scenario
 - Such an action would be both **illegal** and **lacking serious technical merit**



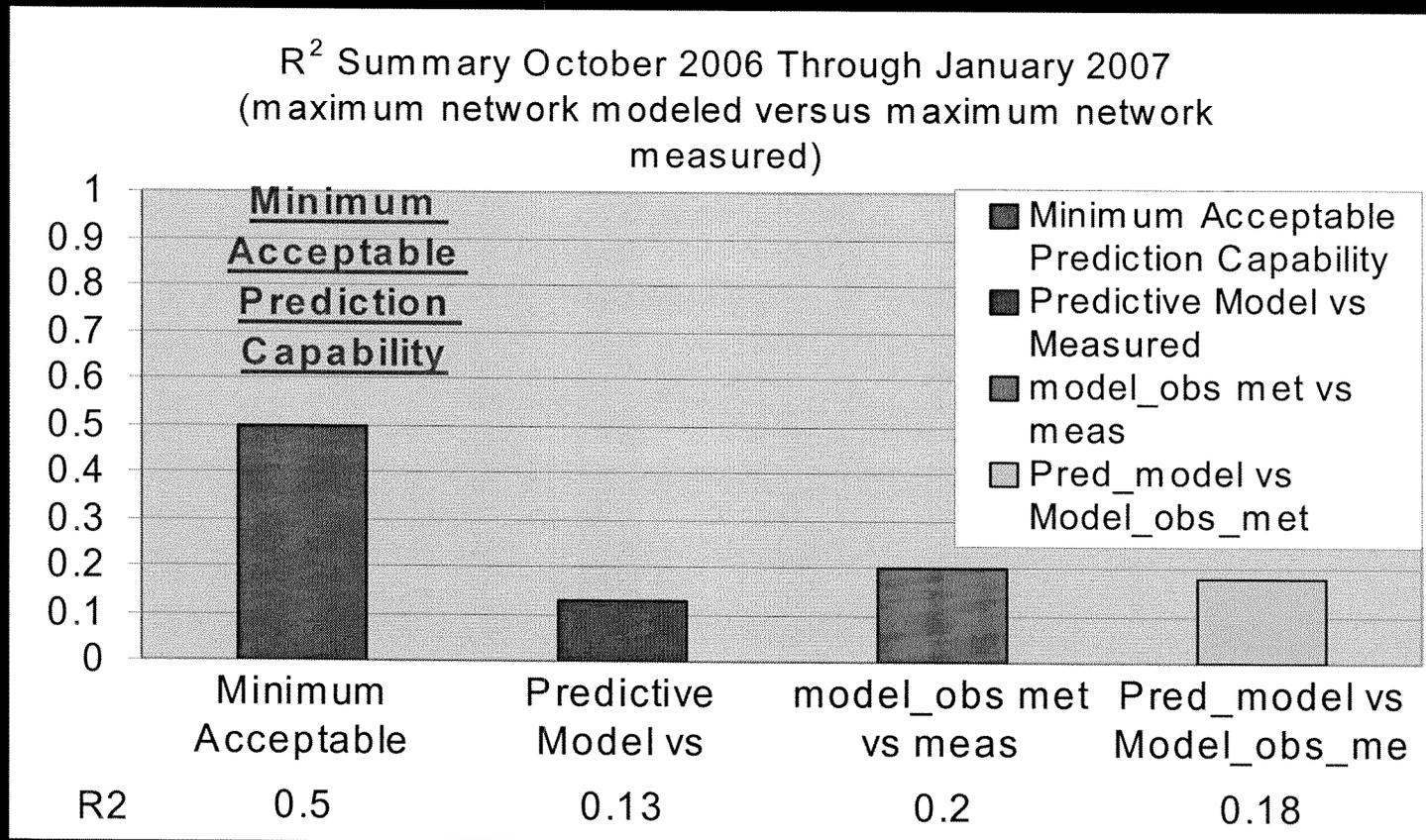
City's Opposition to VDEQ Proposed Consent Order (Options 2 & 3)

- Establishing operating limits based on dispersion technique such as daily predictive modeling:
 - Is in violation of CAA, and EPA and Virginia regulations (See 42 U.S.C. 7423(a); 40 C.F.R. 51.100(hh)(1)(ii); 9 VAC 5-10-20; 9 VAC 5-50-20.H.1.)
 - Section 123 of CAA states that “Emissions limitations cannot be affected in any manner by any dispersion technique includingvarying with atmospheric conditions.”
 - Is demonstrated to be **technically flawed** and meaningless in terms of predictive skill as per EPA guidelines
 - Provides only the **illusion of environmental management** without scientific substance



EPA-ACO's Predictive Modeling has no Scientific Basis

(As expected, statistical analysis shows no analytical skill with predictive approach)



City of Alexandria

Mirant's Proposed Stack Merge Project

- Under 9 VAC 5-10-20, merging of exhaust gases into one stack is defined as a dispersion technique
- Taking credit of dispersion technique without pollution controls is prohibited by 9 VAC 5-50-20-H and Section 123 of CAA
 - Regulations and EPA guidance state that a facility must install pollution controls and reduce emissions of each pollutant for which such credit is sought with stack merging



Mirant's Proposed Stack Merge Project

Existing Five Stack Configuration	Post Stack-Merge Configuration
Max. Impact = NAAQS	Max. Impact = NAAQS
Point of Maximum Impact on Marina Towers	Point of Maximum Impact on Marina Towers
SO ₂ Limit = app. <u>3,000</u> tons	SO ₂ Limit = app. <u>15,000</u> tons



Use of Operating Periods for Establishing Baseline Emissions That Exceeded NAAQS

- Mirant takes position that emissions during 2002-2003 are most representative of PRGS operations
- However, ENSR and AERO analyses confirmed that emissions at the rate the plant emitted during those years caused and contributed to widespread and severe violations of NAAQS
- Also, regulations limit 24-month baseline period to within 5 years before construction, i.e., no earlier than Fall 2002 (construction presumably proposed to start Fall 2007)



Use of Operating Periods for Establishing Baseline Emissions That Exceeded NAAQS

- Mirant's operations after VDEQ's order of August 20, 2005 would represent the most appropriate period to calculate baseline emissions
- Mirant should not benefit from past operating levels that took place because of inadequate regulatory oversight and in violation of NAAQS
- Use of appropriate baseline may result in Major NSR, and potentially require LAER and BACT pollution controls, air increment limits and offsets for NOx and PM2.5
- Major NSR applicability must use comprehensive analysis of all changes, including LNB, SOFA, trona, stack merger, etc.



Local Air Pollution Control District

- Alexandria requested Board to establish a local air pollution control district at September '06 Board meeting
 - Site specific operating regime
 - Committee to monitor and report to Board
 - Focus on public health
 - Assist VDEQ in its air monitoring program
 - Local air pollution control agencies are well placed to ensure the plant's environmental compliance



Summary and Recommendations

- VDEQ must not perpetuate PRGS operations under unlawful and unscientific predictive modeling scheme
- Alexandria strongly supports a comprehensive operating permit for PRGS (option “1+”)
- In the interim after July 1, 2007, PRGS must operate strictly on a three-boiler scenario and without a MES
 - Mirant’s proposed new MES is just a means to maximize power generation and thus, emissions



Summary and Recommendations

- Mirant's proposed stack merge project is a **prohibited** dispersion technique for the purpose of setting higher emission limits
- DEQ should include PM_{2.5} modeling and compliance
 - This issue is of utmost concern to Alexandria and its residents
- Plant modifications requiring NSR review include LNB, SOFA, trona and stack merger



Summary and Recommendations

- VDEQ should not use 2002-2003 operating periods to establish baseline emissions for PRGS. Mirant's operations after VDEQ's order of August 20, 2005 would represent the most appropriate period to calculate baseline emissions
- The Board should establish a local air pollution control district to further ensure health protection of Alexandria residents
 - The Board has the authority to make significant impacts to the lives of thousands of people affected by this plant's emissions



Thank you

Questions?



City of Alexandria

Comprehensive Operating Permit (Option “1+”)

- Alexandria has consistently requested that VDEQ issue a comprehensive operating permit (Option “1+”)
- PRGS emissions have caused NAAQS violations for decades
 - Most recent monitored exceedance on February 23, 2007 and continued opacity exceedances
 - Alexandria residents have been exposed to short- and long-term exposure to harmful pollutants
 - Health impacts of trona are still unknown
 - Continued exceedances of NAAQS in follow-up modeling

