MIRANT COMMUNITY MONITORING GROUP

June 16, 2009, 7:30 – 9:30 pm
City Hall – City Council Work Room

AGENDA

7:30 – 7:45 **Welcome and Introductions**

7:45 – 8:45 **Updates on City/ Mirant Agreement**

- Staff's Overview
- Implementation Project Presentation by WorleyParsons
  - Phase I – Fugitive Emissions Control
  - Phase II – Stack $PM_{2.5}$ Emissions Control
- MCMG Feedback on Phase I engineering options

8:45 – 9:00 **Updates on Other Matters Related to Mirant PRGS**

- $PM_{2.5}$ Ambient Monitor
- Experimental Coal Train Delivery Schedule
- Mirant's Permit Requirements
  - Stack Testing
  - Installation of PM CEMS
- Other Issues/ Complaints

9:00 – 9:25 **Questions and Discussions by MCMG and Community**

9:25 – 9:30 **Next Meeting**

9:30 **Adjourn**

MIRANT COMMUNITY MONITORING GROUP

HANDOUTS

Attachment A – William Skrabak, City of Alexandria, memorandum to The Honorable Mayor and City Council Members, June 15, 2009.

Attachment B – WorleyParsons, Phase I – Fugitive Dust Controls Study Final Report, April 30, 2009.

ATTACHMENT A

City of Alexandria, Virginia

MEMORANDUM

DATE: JUNE 15, 2009

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: WILLIAM J. SKRABAK, DIRECTOR, OFFICE OF ENVIRONMENTAL QUALITY, T&ES

SUBJECT: UPDATE ON JULY 2008 SETTLEMENT AGREEMENT WITH MIRANT

The purpose of this memorandum is to update the City Council on the progress made to date on the execution of the $34 million Settlement Agreement with Mirant signed in July 2008. The "Project" under this agreement consists of two phases: Phase I deals with implementation of improved fugitive dust controls, while Phase II focuses on installation of new air pollution control equipment aimed at reducing fine particulate emissions from the stacks at the Potomac River Generating Station (PRGS). Per this Agreement, Mirant is to spend a total of $34 million on the Project with $2 million aimed at reducing the fugitive dust emissions (Phase I) and $32 million targeted at reducing fine particulate ($PM_{2.5}$) emissions from the stacks (Phase II).

You may recall that per the Settlement Agreement, two separate engineering consultants were selected. Worley Parsons was selected and hired for the project to be the independent "Engineer" with the task of managing and executing the Project. The City selected and hired its own engineering consultant, EPSCO International. EPSCO International's role is to provide technical advice to the City and represent the City's interests during the execution of the Project. Expenses for the City's Engineer, EPSCO International are funded from the Settlement Agreement.

Worley Parsons has completed the attached Phase I Engineering Study entitled "Fugitive Dust Controls Study Final Report". A meeting of the Mirant Community Monitoring Group (MCMG) is scheduled for June 16, 2009 and the Phase I Engineering Study will be the main topic of discussion at this meeting.

The Phase I Engineering Study evaluated 22 engineering control measures. The following five fugitive dust control measures were selected for further evaluation. Worley Parsons prepared total installed cost (TIC) estimates within +/-30% accuracy. In descending order of effectiveness/cost ratio, they are as follows:

1. Addition of a Fog Type Dust Suppression System at the base of both the fly ash silos for the loading of trucks and railcars – TIC: $533,242.
2. Procurement of a Street Sweeper for the clean-up of paved surfaces within the plant battery limits – TIC: $154,451.

3. Addition of 30 feet-high windscreens on three sides (North, East and South) and the replacement of the west side windscreen adjacent to the coal storage pile – TIC: $540,957.
4. Addition of drip pans and drain piping under the remainder of coal conveyors G1 and G2 and all of coal conveyors C1 and C2 – TIC: $325,838.
5. Replacement of the original ash loader with a new ash loader under fly ash silos A – TIC: $497,464.

The next step for the Phase I of the Project is for the City to consider the above five alternatives and select which ones to implement within the $2 million budget for this phase. Staff recommends pursuing the Fog Type Dust Suppression System and purchase of a Street Sweeper immediately due to their potential for effecting a significant reduction in fugitive fine particulate emissions from the plant. The total cost for implementing these would be approximately $700,000.

Staff would also like to get feedback from the MCMG and the community on the 30 feet-high windscreens due to the potential visual impact on the adjoining community and on the adjacent trail along the National Park Service property. The City Staff asked Worley Parsons to consider an alternative to the 30-foot fence. As a result, Worley Parsons identified and estimated the costs for a Coal Pile Perimeter Dust Spray System with a TIC of approximately $1.4 million. While this control measure was not one of the final recommendations in the Phase I report, the advantages and disadvantages of this system may be reconsidered after receiving community's feedback on the 30-foot fence.

The Phase II Engineering Study (Stack emissions) is progressing well and a draft report is expected by end of June 2009. The objective is to upgrade and/or replace the existing air pollution control equipment on all five boilers, i.e., the hot electrostatic precipitator (HESP) and cold electrostatic precipitator (CESP) on each boiler. The results of the Phase II Study will be discussed at future MCMG meetings.

Another condition of the Agreement calls for Mirant to install an additional ambient $PM_{2.5}$ monitor on the west/ south west side of the plant. Following unsuccessful preliminary discussions with Harbor Terrace and Potomac Shores, the City and Mirant are now pursuing the installation of a $PM_{2.5}$ monitor at Riverton Condominium. A suitable location for the monitor has been found and Mirant is finalizing the agreement with Riverton HOA Board of Directors.

The Settlement Agreement requires that Mirant conduct additional stack testing to demonstrate compliance with $PM_{2.5}$ limit of 0.016 lb/MMBtu within five months of completion of the stack merge project (February 2009). Mirant is in the process of completing this testing. City staff will continue to observe test runs when they are conducted and will share the results of tests.

The two parties continue to collaborate on the project and City staff is satisfied with the work performed by Worley Parsons as the Engineer and EPSCO International on behalf of the City. If you have any questions, please feel free to contact me at 703-746-4073.

Attachment

C: Mirant Community Monitoring Group Members
James K. Hartmann, City Manager
James L. Banks, City Attorney
Mark Jinks, Deputy City Manager
Michelle Evans, Deputy City Manager
Emily Baker, P.E., Acting Director, T & ES
Chris, Spera, Assistant City Attorney
Jeff Farner, Deputy Director, Planning and Zoning
Lalit Sharma, Division Chief, Office of Environmental Quality
Khoa Tran, Senior Air Pollution Control Specialist, T&ES-OEQ

ATTACHMENT B

WorleyParsons

resources & energy

EcoNomics

MIRANT PRGS

MIRANT POTOMAC RIVER, LLC

POTOMAC RIVER GENERATING STATION

PHASE I - FUGITIVE DUST CONTROLS STUDY FINAL REPORT

PRGS-0-LI-022-0001–R0

30 April 2009

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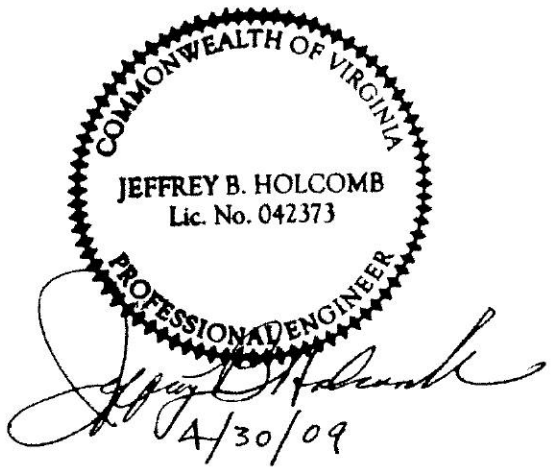


Disclaimer

PROJECT - PHASE I - FUGITIVE DUST CONTROLS STUDY

REV	DESCRIPTION	ORIG	REVIEW	WORLEY-PARSONS APPROVAL	DATE	CLIENT APPROVAL	DATE
A	Issued for preliminary review	T.Hauschild	G. Andes	L. Jones	31Dec08	N/A	
B	Final Draft Issued for Review	T.Hauschild	G. Andes	L. Jones	25Mar09	N/A	
0	Final Issue	T.Hauschild	G. Andes	L. Jones	30Apr09	N/A	

CONTENTS

1. EXECUTIVE SUMMARY

On July 1, 2008, Mirant Potomac River, LLC ("Mirant") and the City of Alexandria ("City") entered an Agreement to undertake the implementation of emissions reduction controls with respect to the fugitive dust (Phase I) and fine particulate matter (PM 2.5) emissions (Phase II) at Mirant's Potomac River Generating Station (PRGS). On October 24, 2008, WorleyParsons received a purchase order from Mirant to provide engineering services in support of this project. The work was officially kicked off with a joint meeting between Mirant, the City, and WorleyParsons on October 30/31, 2008.

The following report addresses the fugitive dust reduction (Phase I) portion of this Agreement. A separate report will address the fine particulate matter (PM 2.5) emissions (Phase II) portion of the Agreement.

WorleyParsons' approach to identification of the needed fugitive dust reduction controls for Phase I was as follows:

- Attend a Kick-off Meeting with Mirant and the City to review scope documents and prepare a brainstorming list of possible fugitive dust controls (the 5 items listed in the Agreement plus 21 new items);
- Observe and collect information on material handling systems, primarily coal and ash at the site;
- Review of past fugitive dust emission reports and recommendations;
- Review of previous and on-going dust control projects at the site;
- Prepare a screening matrix of possible fugitive dust controls (Attachment 5.1);
- Contact vendors to obtain latest technology relative to the possible dust controls;
- Provide Total Installed Cost (TIC) Estimate at +/- 30% accuracy; and
- Provide weekly progress meetings including at-site progress meetings to review and screen selections with Mirant and the City.

On January 2, 2009, a Preliminary Issue of this report was issued to Mirant and the City for their review followed by a meeting with all parties on January 14, 2009 to discuss their comments. During this meeting, eight of the dust controls were screened in the final selection. These eight were put into order of the expected effectiveness by WorleyParsons, Mirant, and the City. Then the eight were placed in a matrix of expected costs (low, medium, and high) versus level of dust reduction (low, medium, and high) expected impact. It was agreed upon by Mirant, the City and WorleyParsons that budgetary cost estimates were needed to produce a +/- 30% TIC for four

items which were jointly agreed upon to be the most advantageous fugitive dust controls to enable further ranking of the dust controls options. In the meantime, an Interim Summary Report was issued on January 26, 2009 with the findings from the January 14, 2009 meeting. The Interim Summary Report was amended on February 13, 2009 to add the evaluation of the ash loader that was not evaluated previously. At this time, the ash loader was added as a fifth dust control option for which to provide a budgetary cost estimate.

On March 3, 2009, at the request of the City and Mirant, WorleyParsons revisited the site to determine if there were any more dust controls that may have been previously missed. At a follow-up meeting on March 11, 2009 to review the budgetary cost estimates for five of the dust controls, it was agreed that the effectiveness of a sixth dust control (conveyor drip pans) should be elevated such that a budgetary cost estimate would be needed for it. In addition, another dust control option (the twenty-eighth: A system at the rotary car dumper to remove coal spillage from the top and side of the railcars after dumping) was added to the screening matrix but without the need for a budgetary cost estimate.

As a result of the above program, the following fugitive dust controls are identified as providing the greatest benefit in reducing fugitive dust emissions with their estimated TIC within the Phase I budgeted apportionment and are hereby recommended for Phase I implementation:

- Addition of a Fog Type Dust Suppression System as the base of both the Fly Ash Silos for the loading of trucks and railcars (TIC: $533,242 +/-30%);
- Procurement of a Street Sweeper for the clean-up of paved surfaces within the plant battery limits (TIC: $154,451 +/-30%);
- Addition of Windscreens on three sides (North, East, and South) and the replacement of the West side windscreen adjacent to coal storage pile (30' high windscreen, TIC: $540,957 +/-30%);
    - Note: For occasions when the coal pile height exceed the 30' high windscreens, a supplemental control could be a truck mounted water spray system to wet the east side of the pile (expected to be similar to, but less effective than, Control 15 – a permanently installed coal pile perimeter dust spray system). While no TIC has been estimated for this equipment, a rough order of magnitude for this equipment is approximately $150,000 +/- 30%, comparable to the street sweeper TIC.

Given the accuracy of the budgetary cost estimates, if funds are still available, the other recommended dust control options rank as follows:

- Addition of drip pans and drain piping under the remainder of Coal Conveyors G1 and G2 and all of Coal Conveyors C1 and C2 (TIC: $325,838 +/-30%)

- Replacement of the existing, original ash loader with a new ash loader under Fly Ash Silo A (TIC: $497,464 +/-30%)

2. INTRODUCTION

The purpose of this engineering study is to compile, screen, and recommend the Phase I fugitive dust controls that would provide the greatest benefit in reducing the fugitive dust emissions at Mirant's PRGS in Alexandria, VA. As part of the Agreement between Mirant and the City of Alexandria, the cost of the recommended Phase I fugitive dust controls is limited to $2,000,000 of the Escrow Account per the Agreement between Mirant and the City.

As part of the engineering study, previous fugitive dust emission studies were reviewed along with their recommendations. Many of these previous recommendations have been or are being incorporated into the existing plant's fugitive dust controls.

As noted in the Executive Summary, WorleyParsons' approach to compiling, screening, and recommending the most beneficial fugitive dust controls was to prepare a matrix of potential fugitive dust controls through a brainstorming session with Mirant and the City of Alexandria personnel during the initial Project Kick-off Meeting. Following the preparation of this matrix, criteria were added to the matrix by which the dust controls could be screened and thereby the recommended dust controls determined. Additional dust control options were added to the matrix by WorleyParsons during the screening process as a result of the site visits and progress meetings. The screening process was carried out in three phases with reviews by Mirant and the City of Alexandria:

- Coarse Screening – Criteria consisting of:
    - Technical Feasibility
    - Estimated Level of Reduction in Dust Control (Levels – High, Medium, and Low)
    - Rough Order of Magnitude Estimated Cost (Supply and Installation) – Ranges of 0-$500k, $500k-$1Mil, $1Mil-$2Mi,l and >$2 Mil
    - Schedule Constraints – Ranges of 0-6Mos, 6Mos-1Yr, and >1Yr
- Detailed Screening – Additional Criteria, added to the above, consisting of:
    - Operation Issues
    - Maintenance Issues
    - Advantages
    - Disadvantages
- Final Screening – Additional Criteria, added to the above, consisting of:

- Preparation of a matrix of the remaining dust controls showing expected effectiveness as a function of level of dust reduction (low, medium, and high) versus expected costs (rough order of magnitude; low, medium and high).
- Preparation of budgetary cost estimates (TIC) of the most advantageous dust controls
- Re-examination of above matrix given the more accurate cost estimates

The results of this screening process can be reviewed in Section 3.4.3 and Attachment 5.1 of this study. It should be noted that as control options were screened from the list of potential candidates; the options were retained in the lower section of the list thereby maintaining a record of the screening process. Additional comments were added to the options noting why any particular option was screened from the potential candidates.

3. DISCUSSION

3.1 PREVIOUS FUGITIVE DUST EMISSION STUDIES for MIRANT

3.1.1 CH2M HILL STUDIES

Two previous fugitive dust emissions studies were completed by CH2M Hill for Mirant. An initial study was completed in July 20, 2001 with a follow-up study completed in July 22, 2004. Both studies are listed as references in Section 6.0 of this study.

In CH2M Hill's initial report, CH2M Hill prepared emission estimates for existing conditions at the site and made recommendations for reducing the fugitive dust emissions. In that report; the two major sources identified with the greatest fugitive emissions potential were wind erosion from the coal pile and fugitive fly ash emissions from truck loading operations. Both of these are still issues and are addressed in this WorleyParsons study.

In CH2M Hill's later report, CH2M Hill identified 8 projects to address fugitive dust emission reduction. Those projects and WorleyParsons evaluation of their level of success are given in Sections 3.2 and 3.3 below.

3.2 COMPLETED FUGITIVE DUST CONTROL PROJECTS by MIRANT

3.2.1 Fly Ash and Bottom Ash Silo Vent Filter Exhausts to Boiler ESP

The exhausts from the vent filters atop the two fly ash and one bottom ash silos were routed to the Boiler C1 hot side electrostatic precipitator. This option was in lieu of adding secondary filters on the ash silo vents.

Note: This project appears to have been successful and no further changes are recommended.

3.2.2 Water Spray Dust Suppression at Fly Ash Truck Loading

Water spray headers were added around the lower perimeter of the four fly ash loading chutes for spraying the ash during loading into trucks.

Note: It is recommended that these water sprays be replaced by more efficient fog type dust suppression systems (Control 4).

3.2.3 Ash Truck Washing Facility

A truck washing unit by Vehicle & Equipment Washers Inc. (VEWI) was added to wash the ash truck wheels and under-carriages as the trucks exit the plant.

Note: A Street Sweeper is being recommended which can pick up dust from any paved roads at the plant (Control 7). This includes the paved area outside the fly ash silos before the trucks get to the truck washing facility.

3.2.4 Coal Pile Wind Erosion Fencing and Windscreen

A +/-12 foot high perimeter chain link fence with windscreen material was constructed along the tops of the concrete walls paralleling the East and West sides of the coal storage pile. While it was recommended in CH2M Hill's reports to provide the 12 foot high windscreen, it was also noted that the overall height of the coal pile is increased during high "stock" conditions in the winter months. The effectiveness of the windscreen is reduced if the coal pile height is taller than the windscreen.

Note: It is recommended that the existing chain link fence and windscreen be replaced with taller and more substantial windscreens (Controls 17A and 17B).

3.2.5 Coal Railcar Unloading Dust Enclosure and Suppression

Heavy duty folding dust curtains were added to the entrance and exit doors of the coal railcar unloading enclosure. In addition, a water spray with surfactant was added to the inside of the railcar unloading enclosure to control airborne dust as the rail car is being inverted and dumped.

Note: It should be noted that a significant amount of water is being added to the coal during this operation which adds to operational costs. While other fog type dust suppression systems would reduce water usage, no changes have been recommended here since no additional fugitive dust emissions reduction would be expected.

3.2.6 Coal Pile Stackout Conveyor Dust Suppression

A water spray with residual surfactant dust suppression system consisting of spray headers at the tail end of the stackout conveyor into the coal pile was added.

Note: This project appears to have been partially successful. The falling material from the discharge could still be caught by the wind creating fugitive dust. A telescoping chute has been added at the discharge of the stacking conveyor thereby enclosing the falling coal as it is discharged onto the coal pile. See Section 3.2.7.

3.2.7 Coal Stackout Conveyor Telescoping Chute

At the end of 2008, Mirant installed a telescoping chute at the discharge of the coal stackout conveyor onto the coal pile.

Note: As a requirement of the Stationary Source Permit to Operate from the Commonwealth of Virginia dated July 31, 2008 (Process Requirement 11), Mirant has installed the telescoping chute.

3.3 POTENTIAL FUGITIVE DUST CONTROL PROJECTS by MIRANT

3.3.1 Last Fly Ash Loader Upgrade

The last of the four original fly ash loaders may be replaced with a new more efficient unit in Fly Ash Silo A. This would result in a more consistent mixture of fly ash and water being loaded into trucks and railcars and thereby reduce fugitive dust emissions.

3.4 WORLEYPARSONS FUGITIVE DUST CONTROLS ENGINEERING STUDY

3.4.1 Kick-off Meeting

At the October 30-31, 2008 Project Kick-off Meeting at the site, the following occurred of noteworthiness:

- The Project Schedule and the Agreement ("Agreement") between Mirant and the City is to serve as the scope document for this engineering study. Namely, the implementation of Phase I for the reduction of fugitive dust emissions shall be the focus of this study. Section 5 of the Agreement, specifically mentions the following improvements that may be included in the selected dust controls:
    - A new fly ash loader for controlling fugitive dust (Control 1 and Section 3.3.1)
    - A dust collection system as identified in the Engineering Study at all fly ash silos, and may include full or partial enclosure of the ash loading area and/or a fogging system (Controls 2, 3, and 4)
    - Membrane material on the inactive portions of the coal pile (Control 5)
    - Replacement of the Facility perimeter fence along the entry road paralleling the railroad tracks fence with a 10-foot chain link fence with durable wind screening (Control 6)
    - A street sweeper with vacuum, rather than using wet suppression (Control 7)

Each of the above improvements has been addressed by this report and the screening control number has been identified in parenthesis at the end of the improvement description.

- A plant walk-thru was taken by all the attendees. The walk-thru gave each attendee a first hand opportunity to see both the existing dust controls Mirant has already installed as well as an opportunity to accumulate ideas for improvements in the later brainstorming session.
- A brainstorming session was held to formulate a list for later screening. Twenty-one additional controls were suggested and added to the list. The 21 controls were later combined into 16 actual controls for screening.
- Additionally, during the same brainstorming session, five parameters were suggested to be followed in looking at fugitive dust controls:
    - Commercially available and demonstrated technologies
    - No un-reasonable scale-up
    - No research and development (R&D) efforts
    - Buy goods from the United States of America, but not required
    - Must have support infrastructure in the United States of America
- For purposes of material handling quantities with all five units operating in 2009, WorleyParsons used historical 2004 coal and ash quantities for 5 unit operation. These quantities are:
    - Coal: 900,000 tons annual consumption; 300,000 tons maximum quarterly consumption
    - Coal storage: 138,000 tons maximum, typically around 100,000 tons
    - Fly Ash: 120,000 tons annual generation
    - Bottom Ash: 14,000 tons annual generation

3.4.2 Site Visits

In addition to the initial Project Kick-off Meeting at the site, four additional site visits (11/12/08, 12/10/08, 1/12/09, and 3/3/09) were made to observe and evaluate the existing the coal and ash handling equipment. On the second site visit (12/10/08) a vendor was brought in to review the ash and coal handling systems and to gather information necessary to provide budgetary

costs for both the fog type dust suppression system at the fly ash loading area under the fly ash silos (Control 4) as well as a coal pile windscreen system (Control 17). The third visit (1/12/09) was made in conjunction with a review of the Preliminary Issue of the study report. During this visit, loading of fly ash into railcars was observed for the first time since this alternative was first tested at the beginning of 2009.

The fourth site visit (3/3/09) was made at the request of the City and Mirant to re-observe the material handling operations and look for any other areas where dust controls would be effective. As a result of this visit, it was agreed that the evaluated effectiveness of one of the dust controls (addition of conveyor drip pans) be elevated such that a budgetary cost estimate would be needed for it. In addition, another dust control (the twenty-eighth: addition of a system to rotary car dumper to remove spillage from the top and the sides of the railcar after dumping) was added to the screening matrix but without a need for a separate budgetary cost estimate.

3.4.3 Compilation of Dust Control Options into Screening Document

Following the Project Kick-off Meeting, the dust control options from the brainstorming session were compiled into an initial draft of a screening document. As mentioned in the introduction of this report, these options along with other options added as a result of the site visits and progress meetings pushed the total number of dust controls up to 27.

These control ideas were subjected to both coarse and detailed screening, led by WorleyParsons with input from Mirant and the City during weekly phone meetings and an all-day face-to-face meeting between WorleyParsons, Mirant, and the City. After the two screenings, eight of the control suggestions became candidates in the final selection screening. Of the 19 controls not considered in the final selection screening, one was recommended to be moved over to the Phase II PM2.5 study and the remainder were removed from further consideration as being too costly, not technically feasible, of minimal impact, had no known solution, were not control technologies, or were duplicative of other suggested controls. It should be noted that none of these 19 controls were eliminated from the listing; they were simply moved to the end of the listing.

The eight controls that were screened in the final selection were as follows: (Note – Control numbering is from the original list of all 27 controls and implies no relative comparison.)

Control 1: Ash Loader

Control 2: Door Closures at Truck Entrances at Base of Fly Ash Silos

Control 4: Fog Dust Suppression at Base of Fly Ash Silos

Control 7: Street Sweeper

Control 8: Drip Pans (under conveyors)

Control 10: Telescoping Chute or Lowering Well

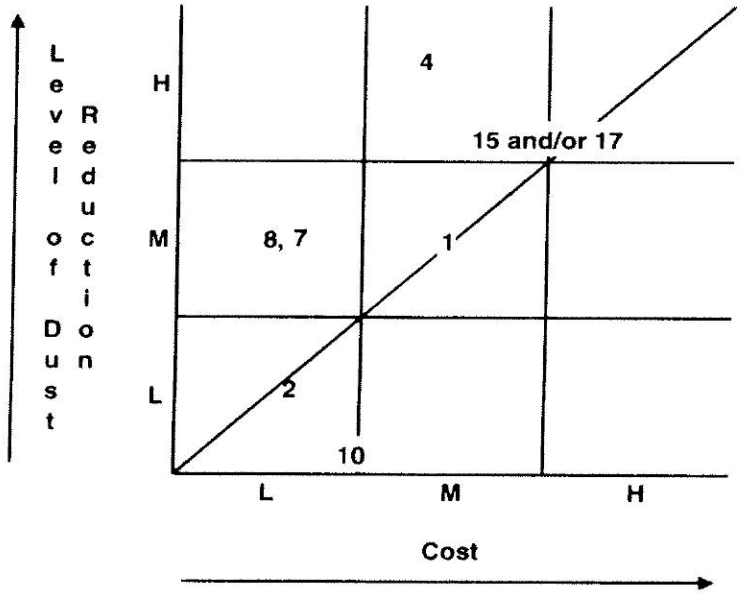
Control 15: Coal Pile Perimeter Dust Spray System

Control 17: Replace or Optimize Fence Around Coal Pile

3.4.4 Preparation of Matrix of Dust Controls Based on Rough Order of Magnitude (ROM) Costs

A Preliminary version of this report with the final screening of the above controls was issued for review to Mirant and the City on January 2, 2009.

After independent ranking the above eight controls, Mirant, the City, and WorleyParsons met on January 14, 2009 to discuss the Preliminary version of this report and to form a consensus ranking of the controls in order of expected effectiveness and then placed them in the matrix. The matrix is shown below:



A "breakline" was placed on the matrix and those controls above and to the left of the "breakline" were those recommended for implementation, pending preparation of and review of the budgetary costs. The significance of "above and to the left" refers to the higher level of dust

reduction for lesser cost resulting in a higher effective control. As a result Dust Control Options 2 and 10 were removed from further consideration.

Note: As a result of the March 3 site visit to re-observe the material handling operations, the need for the additional drip pans under portions of the coal conveyors (Control 8) was elevated to a higher dust reduction level (low to medium) and added to the list of controls for preparing budgetary cost estimates for as agreed upon by Mirant, the City, and WorleyParsons on March 11, 2009.

3.4.5 Preparation of Budgetary Cost Estimates

As discussed in our meeting on January14, 2009, it was agreed by both Mirant and the City that the completion date for the final Phase I Fugitive Dust Controls Study be extended to provide time to obtain budgetary quotes for major equipment and to produce a ±30% TIC estimate (complete with recommended contingency). Mirant, the City, and WorleyParsons jointly agreed the following controls to be the most advantageous fugitive dust controls for the PRGS.

Budgetary cost estimates were to be completed for the following controls:

Control 1: Ash Loader

Control 4: Fog Dust Suppression at Base of Fly Ash Silos

Control 7: Street Sweeper

Control 8: Drip Pans (under conveyors) – See Note at the end of Section 3.4.4.

Control 15: Coal Pile Perimeter Dust Spray System

Control 17: Replace or Optimize Fence Around Coal Pile

17A – 30' High Windscreens

17B – 45' High Windscreens

In the meantime, WorleyParsons was to provide an Interim Summary Report for the Phase I Fugitive Dust Controls Study which was done on January 26, 2009 and then amended on February 13, 2009 to add the ash loader (Control 1).

Budgetary cost estimates were completed for the above dust controls and can be found in Attachment 5.2.

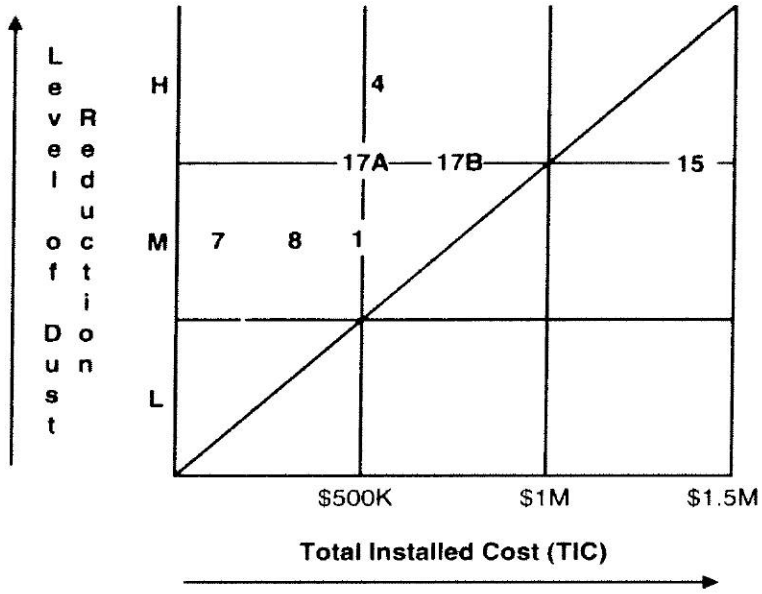
Budgetary costs estimates are based on the following:

1. Budgetary cost estimates are +/- 30%.

2. Each individual dust control cost estimate is inclusive of all of the equipment needed for that control standing alone from other controls. Bundling of dust controls may result in redundant equipment (i.e., Control 4 for the fog dust suppression at the base of the fly ash silos and Control 15 for the coal pile dust suppression system have some redundant electrics between them).
3. Budgetary cost estimates are TIC including the following implementation costs by WorleyParsons:
    a. Project Management and Administration
    b. Engineering (including travel)
    c. Construction Supervision and Start-up
    d. Procurement (including travel)
    e. Project Controls
4. Each dust control estimate is a stand alone estimate relative to the above implementation costs. Bundling of dust control options can result in a savings in the implementation costs. For example, construction supervision costs for two dust controls where the same construction supervision is needed will result in a reduced cost with the addition of both.
5. Following Contingencies are included in the TIC:
    a. On Quoted Items @ 10%
    b. On Services @ 10%
    c. On Construction Estimate @ 20%
6. Procurement to be on Mirant paper utilizing Mirant's Terms and Conditions and competitive bidding requirements.

3.4.6 Preparation of Matrix on Total Installed Cost (TIC) Budgetary Cost Estimates

The previous matrix from Section 3.4.4 is updated based on the TIC budgetary cost estimates:



3.4.7 Evaluation of Recommended Dust Control Options

While each of the dust control options have been evaluated in the screening document, each of the recommended dust control options above the "breakline" on the matrix are further discussed below. WorleyParsons recommends that the options be implemented in the following order, proceeding as far as the allocated budget permits.

- **Control 4: <u>Addition of a Fog Type Dust Suppression System at the base of both Fly Ash Silos for the loading of trucks and railcars</u>**

  A fogging type dust suppression system at the fly ash silos was one of the dust control improvements mentioned in the Agreement.

  Presently, water sprays are used at the bottom of the fly ash truck loading chutes. These water sprays are less efficient in containing the fly ash dust than the latest technology of fog type dust suppression systems.

  A fog type dust suppression system would consist of fog nozzles mounted on a frame located around the existing fly ash loading chutes similar to the photos shown in Attachment 5.3. In combination with the fog nozzles, strip curtains would be located around the frame. The strip curtains are provided to impede any outside wind, so that additional closures are not required at the

truck openings (Control 2). This system would be made suitable for both the loading of trucks as well as railcars.

- **Control 7: <u>Procurement of a Street Sweeper for the clean-up of paved surfaces on plant property</u>**

  A street sweeper was one of the dust control improvements mentioned in the Agreement.

  Present ash loading operation requires the washdown of the paved areas in front of the ash silos after each truck loading session in the morning and afternoon. The ash dust is washed into roadway trenches that carry the slurry to Mirant's settling pond system. Any residual dust missed by this washdown operation is susceptible to becoming wind blown fugitive dust. A wet vacuum-style street sweeper would be much more efficient at collecting dust from paved areas.

  The street sweeper can be used elsewhere in the plant on any paved surface.

  As identified on the screening document, there are a number of issues that must be addressed relative to the usage of a street sweeper but these should be surmountable during the implementation stage.

  There are a number of suppliers for these street sweepers with numerous available options depending on the requirements of Mirant. A comparison of two street sweepers is shown in Attachment 5.4 including the one used in the budgetary cost estimate.

- **Controls 17A and 17B: <u>Addition of Windscreens on three sides (North, East and South) and replacement of West side windscreen adjacent to coal storage pile</u>**

  The present windscreens are inadequate for the height of coal pile that Mirant needs. The coal pile is designed for 138,000 tons equating to a 46 foot tall pile. However, typically the plant operates with a coal pile of 100,000 tons, equating to a 28 foot tall pile. For a windscreen to be most effective, the windscreen must be as high as the coal pile. If the coal pile is higher than the windscreen, the windscreen has reduced effectiveness. Therefore, budgetary cost estimates were prepared for both of the two different coal pile heights; nominal 30' (Control 17 A) and 45' (Control 17B) high windscreens. In order to reduce the fugitive dust emissions toward the City of Alexandria, windscreens are required on the North, East and South sides of the coal pile. Refer to Attachment 5.5.

As noted in previous CH2M Hill reports, the fugitive dust emissions from the coal pile is likely one of the largest sources of fugitive dust emissions at the plant.

As mentioned in the Executive Summary, a 30' high windscreen is recommended. For occasions when the coal pile height exceeds the 30' high windscreens, a supplemental control could be a truck mounted water spray system to wet the east side of the pile (expected to be similar to but less effective than Control 15 - a permanently installed coal pile perimeter dust spray system). While no TIC has been estimated for this equipment, a rough order of magnitude for this equipment is approximately $150,000 +/- 30%, comparable to the street sweeper TIC. An example of a mobile truck mounted coal pile spray unit is shown in Attachment 5.8.

- **Control 8: <u>Addition of drip pans and drains under sections of Coal Conveyors without drip pans</u>**

  The lower sections of Coal Conveyors G1 and G2 and all of Coal Conveyors C1 and C2 do not have drip pans beneath their return belt strands. Any coal residual that gets past the head-end belt scrapers on the return belt either builds up on the return idler rolls or falls onto the drip pans or the ground in the event there is not drip pan. On more than one occasion during the site visits, dust was noted falling from the coal conveyors.

- **Control 1: <u>New Fly Ash Loader</u>**

  The last of the four original fly ash loaders may be replaced with a new more efficient unit in Fly Ash Silo A. This would result in a more consistent mixture of fly ash and water being loaded into trucks and railcars and thereby reduce fugitive dust emissions. Refer to Attachment 5.6.

The following dust control option falls below the "breakline" on the matrix in Section 3.4.6 and is not recommended. However, it is further discussed here:

- **Control 15: <u>Coal Pile Perimeter Dust Spray System</u>**

  While the windscreens in Controls 17A and 17B are recommended, initially an alternate was a coal pile spray system around the perimeter of the coal pile. The coal pile perimeter dust spray system would consist of water cannons located around the perimeter of the coal pile. The entire pile could be sprayed from the water cannons or only a section of the pile could be sprayed. Refer to Attachment 5.7.

The system could be automated with a weather station to control the water cannon operation by measuring the wind direction, wind velocity, ambient temperature, and humidity; or the system could be manually operated.

These types of systems have been supplied at other power plants, and are available from several suppliers. These systems do require large amounts of water (on the order of 7,500 gallons per day which equates to 0.1" of rainfall per day unless equivalent rainfall has occurred) and drifting of water spray is possible.

Due to the high estimated budgetary cost of close to 1.4 million dollars and its medium-high level of dust reduction, this dust control option falls below the "breakline" on the matrix in Section 3.4.6 and is therefore not recommended relative to the other dust control options.

4. CONCLUSION

The WorleyParsons Fugitive Dust Control Engineering Study, based on good engineering judgment, has technically evaluated the control options and recommended the most beneficial dust control strategies in reducing the fugitive dust emissions at Mirant's PRGS within the allocated budget.

As a result of this study, the following fugitive dust controls are identified as providing the greatest benefit in reducing fugitive dust:

- Addition of a Fog Type Dust Suppression System at the base of both Fly Ash Silos for the loading of trucks and railcars (TIC: $533,242 +/-30%);
- Procurement of a Street Sweeper for the clean-up of paved surfaces within the plant battery limits (TIC: $154,451 +/-30%);
- Addition of Windscreens on three sides (North, East and South) and replacement of West side windscreen adjacent to coal storage pile (30' high windscreen, TIC: $540,957 +/-30%);

Given the accuracy of the budgetary cost estimates, if funds are still available, the other recommended dust controls rank as follows:

- Addition of drip pans and drain piping under the remainder of Coal Conveyors G1 and G2 and all of Coal Conveyors C1 and C2 (TIC: $325,838 +/-30%)
- Replacement of existing, original ash loader with new ash loader under Fly Ash Silo A (TIC: $497,464 +/-30%)

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February 12, 2009

VIA ELECTRONIC MAIL
AND FIRST CLASS MAIL

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Re: Mirant Potomac River Generating Station: Amendment to July 31, 2008 Stationary Source Permit; Request for Public Hearing

Dear Messrs. Paylor and Faha:

The City of Alexandria, Virginia ("Alexandria") submits for your attention two permitting and compliance matters related to the Mirant Potomac River Generating Station ("PRGS") that are of utmost interest and concern to Alexandria and its residents. The first matter concerns Mirant's potential use of a dry sorbent other than sodium sesquicarbonate ("Trona") for sulfur dioxide ("SO_2") and acid gas emissions reductions. The second matter concerns Mirant's emissions testing requirements upon completion of the stack merge project.

We understand that Mirant recently submitted to the Virginia Department of Environmental Quality ("VDEQ") a request to use sodium bicarbonate ("SBC") as an alternative to Trona. Pursuant to Paragraph 5 of Mirant's July 31, 2008 Stationary Source Permit to Operate ("Permit"), such a request requires the submission of a Form 7 Application, or equivalent, for an amendment to the Permit. This requirement is consistent with that set out in Paragraph 25.d. of the Project Schedule and Agreement ("Project Agreement") between Mirant and Alexandria. Paragraph 6 of the Permit also requires extensive documentation to support the Application, including a stack test protocol (testing for SO_2, particulate matter, carbon monoxide and acid gases), in-depth description of the chemical properties of SBC, and any other data and

information available in the public sector in Mirant's possession that will support the effectiveness of SBC in reducing SO_2 and acid gas emissions and its effects on particulate emissions (PM, PM_{10} and $PM_{2.5}$). Paragraph 25.d. of the Project Agreement also provides that Mirant allow access to Alexandria to observe testing related to the use of SBC. This has not occurred and Mirant has not informed Alexandria of any testing schedule.

Although the use of an alternate dry sorbent was anticipated in both the Project Agreement and the Permit, the community remains cautious concerning its use because of the dearth of analyses of the potential impact on particulate matter emissions, an impact that would be specific to the residential communities adjacent to and nearby the PRGS. Accordingly, Alexandria requests: (i) the opportunity for representatives of VDEQ and Alexandria to observe any other tests to be conducted; (ii) copies of all supporting documentation as required by Paragraph 6 of the Permit and any other correspondence related to the proposed use of SBC; and (iii) a public comment and review process. This latter item is particularly important in light of the community's strong interest in a thorough and comprehensive evaluation of potential impacts of any operational and process changes at the PRGS. As part of the required Permit amendment process, Alexandria and its residents should have the opportunity to review all test results and other data and provide comments to VDEQ in a public comment and hearing process.

On the matter of stack merge testing, Alexandria understands that Mirant completed its stack merge project at the end of January 2009. Pursuant to Paragraph 34.b. of the Permit and Paragraph 7.e. of the Project Agreement, within five (5) months of completion of the stack merge, Mirant must conduct its first stack test to demonstrate compliance with the $PM_{2.5}$ limit contained in Paragraph 28 of the Permit and Paragraph 7.a. of the Project Agreement. Also, Appendix A of the Permit requires that the PRGS is precluded from operating a one base unit scenario except in the limited circumstances set out in Appendix A. Furthermore, Paragraph 40 of the Permit requires that Mirant maintain on-site records of emission data and the operating parameters of each operating scenario. Alexandria requests that VDEQ closely monitor operations at the PRGS to ensure continued compliance with the requirements of the Permit.

Thank you for your attention to the above matters. If you have any questions, please contact William Skrabak, Director, Office of Environmental Quality, Transportation and Environmental Services, at (703) 519-3400 (ext. 163).

Sincerely,
City of Alexandria

Christopher Spera
Acting City Attorney

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The Honorable James P. Moran
The Honorable Richard L. Saslaw, Senate of Virginia
The Honorable Patricia S. Ticer, Senate of Virginia
The Honorable Mary Margaret Whipple, Senate of Virginia
The Honorable Bob Brink, Virginia House of Delegates
The Honorable Adam P. Ebbin, Virginia House of Delegates
The Honorable David L. Englin, Virginia House of Delegates
The Honorable Al Eisenberg, Virginia House of Delegates
The Honorable Mayor and Members of City Council
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