

**Environmental
Resources
Management**

200 Princeton South, Ste. 160
Ewing, NJ 08628
(609) 895-0050 (telephone)
(609) 895-0111(fax)

www.erm.com



June 24, 2015

Mr. Steven R. Pursley, P.E.
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Subject: Application Status: Incomplete
Moundsville Power, LLC
Moundsville Plant
Permit No. R14-030A
Plant ID No. 051-00188

Dear Mr. Pursley:

On behalf of Moundsville Power, LLC (Moundsville Power), Environmental Resources Management (ERM) submits this letter in response to WVDEP's June 11, 2015 letter regarding the above-referenced air permit application. The air permit application is for a Class II Administrative Update of the Approved Air Permit for Moundsville Power's proposed combined-cycle power plant project.

WVDEP's comment is repeated below, followed by Moundsville Power's response.

1. Please perform calculations showing the new fire water pump engine emission rates on a g/hp-hr basis. If any of these rates are greater than what was proposed as BACT in your original permit application, please resubmit a new BACT analysis for those pollutants.

Response:

The Class II Administrative Update air permit application submitted to WVDEP on April 22, 2015 provided calculations showing the new fire water pump engine emission rates on a grams per horsepower-hour (g/hp-hr) basis. These calculations were provided in an Excel file on a CD in **Appendix 1** of the application, specifically the tab "*Fire Water Pump-New*". A copy of this CD is enclosed for your reference.

The emission factors used for the new Fire Water Pump emission calculations are exactly the same as those used for the original Fire Water

Entire Document
NON-CONFIDENTIAL

Mr. Steven R. Pursley, WVDEP
24 June 2015
Page 2

Pump. Although the new Fire Water Pump is larger than the original one (500 hp vs. 251 hp), the new engine is subject to the same numerical emission standards in Table 4 of New Source Performance Standard (NSPS) Subpart IIII (Emission Standards For Stationary Fire Pump Engines), specifically:

| Pollutant | Emission Standard (g/hp-hr) |
|------------------------|-----------------------------|
| NMHC + NO _x | 3.0 |
| CO | 2.6 |
| PM | 0.15 |

Given that the g/hp-hr emission factors remain the same, revisitation of BACT for the new Fire Water Pump should not be necessary.

We hope this answers your questions. Please call me at (609) 403-7505 if you have any additional comments or need any additional information.

Sincerely,



Jon D. Perry, P.E.
Project Manager

Enclosure (CD of Appendix 1 Calculations)

051-00188

| | |
|----------|--------------------------|
| COMPANY | <u>Moundsville Power</u> |
| FACILITY | <u>Moundsville</u> |
| REGION | <u>1</u> |
| REG. | <u>14-0030A</u> |

MEMO

To: Steve Pursley
From: Jon McClung JDM
CC: Laura Crowder, Jay Fedczak, Bev McKeone, Joe Kessler
Date: June 24, 2015
Re: Moundsville Power LLC Modeling Review
Class II Administrative Update Application R14-30A

I have completed my review and replication of the air dispersion modeling analysis submitted in support of the Class II Administrative Update Permit Application (R14-30A) for the Moundsville Power LLC (Moundsville Power) facility to be located in Moundsville, Marshall County, WV. The Division of Air Quality (DAQ) approved Permit R14-30 for Moundsville Power on November 21, 2014. Moundsville Power submitted an application for a Class II Administrative Update on April 22, 2015. The dispersion modeling analysis for the original PSD application was required pursuant to §45-14-9 (Requirements Relating to the Source's Impact on Air Quality). Moundsville Power has performed an air quality analysis that includes the changes proposed in the Class II Administrative Update Application. This memo focuses on these changes; please refer to the original report dated June 18, 2014 for complete details regarding the review and replication of the original PSD application and the modeling report submitted by Moundsville Power supporting the Class II Update. The revised modeling analysis performed by Moundsville Power follows the original approved protocol with updates as noted below.

The changes Moundsville Power proposes in the application R14-30A are:

- Increase in the maximum heat input of each combustion turbine (CT) from 2,087 million Btu per hour (MMBtu/hr) to 2,232 MMBtu/hr;
- Increase in the maximum duct firing rate for each heat recovery steam generator (HRSG) from 72.1 MMBtu/hr to 187.61 MMBtu/hr;
- A reduction in the exhaust stack height of each CT/HRSG from 180.5 feet to 175 feet;
- Minor variations in exhaust gas flow rates and temperature for each CT/HRSG;
- Changes in the locations of downwash structures and modeled point sources; and
- Increase in the size of the emergency Fire Water pump from 251 horsepower (hp) to 500hp.

Overall, these changes increase the nominal electric generating capacity of the plant from 549 megawatts (MW) to 631 MW.

Marshall County, WV is in attainment or unclassifiable/attainment status for all criteria pollutants except for 1-hr SO₂. Project emissions of SO₂ are below the significant emission rate (SER), therefore SO₂ is not subject to new source review. Pollutants emitted in excess of the significant emission rate are subject to PSD review in areas of attainment. The criteria pollutants that exceed the SER associated with the proposed facility are in Table 1.

Table 1. Project emission rates

| Pollutant | Original PSD Application Project Emissions (tons/yr) | Class II Administrative Update Application Project Emissions (tons/yr) | PSD Review |
|-------------------------|--|--|----------------|
| NO _x | 145.3 | 155.3 | Applicable |
| CO | 209.4 | 215.7 | Applicable |
| SO ₂ | 4.8 | 5.6 | Not Applicable |
| PM ₁₀ | 70.1 | 82.3 | Applicable |
| PM _{2.5} | 68.0 | 79.8 | Applicable |
| VOC | 74.8 | 78.3 | Applicable |
| GHG (CO ₂ e) | 2,240,618 | 2,400,486 | Applicable |

Dispersion modeling was conducted for NO_x, CO, PM₁₀, and PM_{2.5}. Greenhouse gases (GHG) are not modeled as part the PSD application review process and VOC emissions as a precursor to tropospheric ozone formation were addressed through a qualitative analysis by the applicant in the modeling protocol. Modeled emission rates are included in Attachment 1 and stack parameters are included in Attachment 2.

Table 2 presents a summary of the air quality standards that were addressed for NO₂, CO, PM₁₀, and PM_{2.5}.

Table 2. Ambient Air Quality Standards, SILs, and PSD Increments (All concentrations in µg/m³)

| Pollutant | Averaging Period | SIL | PSD Increments | NAAQS |
|------------------|------------------|-----|----------------|-------|
| NO ₂ | 1-Hour | 7.5 | - | 188 |
| | Annual | 1 | 25 | 100 |
| PM ₁₀ | 24-Hour | 5 | 30 | 150 |
| | Annual | 1 | 17 | - |

| | | | | |
|-------------------|---------|------|---|--------|
| PM _{2.5} | 24-Hour | 1.2 | 9 | 35 |
| | Annual | 0.3 | 4 | 12 |
| CO | 1-Hour | 2000 | - | 40,000 |
| | 8-Hour | 500 | - | 10,000 |

An air quality impact analysis, as a part of the PSD review process, is a two tiered process. First, a proposed facility is modeled by itself, on a pollutant-by-pollutant and averaging-time basis, to determine if ambient air concentrations predicted by the model exceed the significant impact level (SIL). If ambient impacts are below the SIL then the proposed source is deemed to not have a significant impact and no further modeling is needed. If ambient impacts exceed the SIL then the modeling analysis proceeds to the second tier of cumulative modeling. The cumulative modeling analysis consists of modeling the proposed facility with existing off-site sources and adding representative background concentrations and comparing the results to PSD increments (increment consuming and expanding sources only) and NAAQS. In order to receive a PSD permit, the proposed source must comply with PSD increments and must not cause or contribute to an exceedance of the NAAQS. In cases where the NAAQS are predicted to be exceeded in the cumulative analysis, the proposed source would not be considered to cause or contribute to the exceedance if the project-only impacts are less than the SIL.

Modeling Basis

The modeling system used conforms to 40 CFR 51 Appendix W, applicable guidance, and the approved protocol. The differences between the original PSD modeling analysis and the Class II Administrative Update modeling analysis is summarized below:

- The latest version of AERMOD available was used (version 14134) in default mode. The original PSD modeling used the latest version of AERMOD available at the time (version 13350).
- The latest version of AERMET available was used (version 14134). The original PSD modeling used the latest version of AERMET available at the time (version 13350).

Modeling Operating Scenarios

For the combustion turbines, auxiliary boiler, cooling tower, emergency generator, and fire pump, the modeling performed in support of the Class II Administrative Update application uses the same modeling operating scenarios as the original PSD application.

For the auxiliary boiler, the controlling modeling conditions continue to be 12 hr/day and 2000 hr/yr of operation. For the emergency generator and fire pump, the controlling modeling conditions continue to be 1 hr/day and 500 hr/yr of operation.

SIL Analysis Results (Tier I)

The results of the Significant Impact Analysis for the Moundsville Power Project sources are included in Tables 4-7. The results represent continuous operation of both turbines simultaneously for 8760 hour/year, except for the cold start scenario as described in the original modeling report. The modeling conditions for the auxiliary boiler, emergency generator, fire pump, and cooling tower are as described above. For all pollutants and averaging times, the maximum modeled concentration is below the significant impact level except for 1-hr NO₂. No further modeling analysis is necessary except for 1-hr NO₂.

Table 4. NO₂ SIL Analysis Results

| Pollutant | Averaging Time | Combustion Turbine Modeling Scenario | Maximum Modeled Concentration (µg/m ³) | Significant Impact Level (SIL) (µg/m ³) |
|-----------------|----------------|--|--|---|
| NO ₂ | 1-hr | Normal Operation 100% load (worst case normal operation) | 25.06 | 7.5 |
| | 1-hr | Hot Start | 28.45 | |
| | 1-hr | Warm Start | 42.11 | |
| | 1-hr | Cold Start CT#1 | 29.11 | |
| | 1-hr | Cold Start CT#2 | 28.87 | |
| | 1-hr | Shutdown | 25.06 | |
| | Annual | Normal Operation 100% load (worst case) | 0.58 | 1 |

Table 5. CO SIL Analysis Results

| Pollutant | Averaging Time | Combustion Turbine Modeling Scenario | Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$) | Significant Impact Level (SIL) ($\mu\text{g}/\text{m}^3$) |
|-----------|----------------|--|--|---|
| CO | 1-hr | Normal Operation 100% load (worst case normal operation) | 471.20 | 2,000 |
| | 1-hr | Hot Start | 471.20 | |
| | 1-hr | Warm Start | 471.20 | |
| | 1-hr | Cold Start CT#1 | 1036.78 | |
| | 1-hr | Cold Start CT#2 | 1030.96 | |
| | 1-hr | Shutdown | 471.20 | |
| | 8-hr | Normal Operation 100% load (worst case) | 180.68 | 500 |

Table 6. PM_{2.5} SIL Analysis Results

| Pollutant | Averaging Time | Combustion Turbine Modeling Scenario | Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$) | Significant Impact Level (SIL) ($\mu\text{g}/\text{m}^3$) |
|-------------------|----------------|--------------------------------------|--|---|
| PM _{2.5} | 24-hr | 50% Load (worst case) | 1.05 | 1.2 |
| | 24-hr | 100% Load | 1.05 | |
| | Annual | 50% Load (worst case) | 0.18 | 0.3 |
| | Annual | 100% load | 0.15 | |

Table 7. PM₁₀ SIL Analysis Results

| Pollutant | Averaging Time | Combustion Turbine Modeling Scenario | Maximum Modeled Concentration (µg/m ³) | Significant Impact Level (SIL) (µg/m ³) |
|------------------|----------------|--------------------------------------|--|---|
| PM ₁₀ | 24-hr | 50% Load (worst case) | 4.21 | 5 |
| | 24-hr | 100% Load | 4.21 | |
| | Annual | 50% Load (worst case) | 0.20 | 1 |
| | Annual | 100% load | 0.19 | |

Cumulative Analysis Results (Tier D)

The results of the Cumulative Impact Analysis for the 1-hr NO₂ NAAQS of 188 µg/m³ are included in Tables 8-9. The analysis only includes an evaluation of compliance with the NAAQS since an increment for 1-hr NO₂ has not been established. This analysis includes impacts the Moundsville Power Project sources, off-site existing sources, and representative background concentrations of NO₂. For the Moundsville Power Project sources, the results represent continuous operation of both turbines simultaneously for 8760 hour/year, except for the cold start scenario as described above. The modeling conditions for the auxiliary boiler, emergency generator, fire pump, and cooling tower are as described above. For off-site existing sources, the impacts represent maximum hourly potential emissions, as determined from Title V permits and applications submitted to the Division of Air Quality. The background concentration data is for the monitor in Washington County, PA (ID # 41-125-0005) as summarized above with detailed information in the applicant's modeling report.

The cumulative analysis evaluated impacts at all receptors above the SIL in the SIL analysis. The SIL analysis is based on the highest-first-high concentration. The cumulative analysis is based on the form of the 1-hr NO₂ standard, which is the 98th percentile of the yearly distribution of 1-hour daily maximum concentrations, which is equivalent to the 8th highest rank of daily maximum concentrations.

The MAXDCONT output option from AERMOD allows the determination of contribution of all sources to modeled concentrations. This option was used to determine Moundsville Power's contribution to the total modeled concentration at all modeled receptors for all hours in the meteorological data.

Table 8 shows the maximum modeled concentrations for all the receptors modeled in the cumulative analysis for all operating scenarios. Moundsville Power's contribution is less than

the SIL, paired in time and space. EPA's and DAQ's longstanding use of the SIL as a permitting tool is that a facility does not cause or contribute to an exceedance of the NAAQS if it's contribution is less than the SIL and may still receive a permit as long as all other criteria are met.

Table 8. NO₂ NAAQS Analysis Results - Maximum Modeled Concentrations

| Pollutant | Averaging Time | Combustion Turbine Modeling Scenario | Maximum Modeled Concentration Exceeding NAAQS | Rank | Moundsville Power Contribution | SIL | Background Contribution |
|-----------------|----------------|--|---|------|--------------------------------|----------------------|-------------------------|
| | | | (µg/m ³) | | (µg/m ³) | (µg/m ³) | (µg/m ³) |
| NO ₂ | 1-hr | Normal Operation 100% load (worst case normal operation) | 268.03 | 8th | 0.08 | 7.5 | 36.35 |
| | 1-hr | Hot Start | 268.06 | 8th | 0.11 | | 36.35 |
| | 1-hr | Warm Start | 268.08 | 8th | 0.13 | | 36.35 |
| | 1-hr | Cold Start CT#1 | 268.06 | 8th | 0.11 | | 36.35 |
| | 1-hr | Cold Start CT#2 | 268.06 | 8th | 0.11 | | 36.35 |
| | 1-hr | Shutdown | 268.03 | 8th | 0.08 | | 36.35 |

Table 9 shows Moundsville Power's maximum modeled contribution to the modeled NAAQS exceedances, rather than Table 8 that shows Moundsville Power's contribution to the maximum NAAQS exceedances. These results show that Moundsville Power's maximum contribution to a NAAQS exceedance remains below the SIL. No further modeling for 1-hr NO₂ is necessary.

Table 9. NO₂ NAAQS Analysis Results - Moundsville Power's Maximum Modeled Contribution to the Modeled NAAQS Exceedances

| Pollutant | Averaging Time | Combustion Turbine Modeling Scenario | Modeled Concentration Exceeding NAAQS with Maximum Moundsville Contribution | Rank | Moundsville Power Contribution | SIL | Background Contribution |
|-----------------|----------------|--|---|------|--------------------------------|----------------------|-------------------------|
| | | | (µg/m ³) | | (µg/m ³) | (µg/m ³) | (µg/m ³) |
| NO ₂ | 1-hr | Normal Operation 100% load (worst case normal operation) | 204.12 | 9th | 1.66 | 7.5 | 33.21 |
| | 1-hr | Hot Start | 195.56 | 8th | 2.69 | | 36.35 |
| | 1-hr | Warm Start | 196.51 | 8th | 3.64 | | 36.35 |
| | 1-hr | Cold Start CT#1 | 189.09 | 9th | 3.03 | | 36.35 |
| | 1-hr | Cold Start CT#2 | 195.91 | 8th | 3.04 | | 36.35 |
| | 1-hr | Shutdown | 204.13 | 9th | 1.67 | | 33.21 |

Summary

The air quality impact analysis prepared and submitted by Moundsville Power, in support of the Class II Administrative Update application, has been reviewed and replicated and conforms to 40 CFR 51 Appendix W, applicable guidance, and the original PSD modeling protocol. The analysis demonstrates that the proposed facility operations will have modeled impacts less than the SILs for all pollutants and averaging times except for 1-hr NO₂. The cumulative modeling analysis demonstrates that Moundsville Power's contribution to the modeled NAAQS exceedances for 1-hr NO₂ are less than the SIL and Moundsville Power does not cause or contribute to the modeled NAAQS exceedances.

ATTACHMENT 1

Modeled Emission Rates from Applicant's Report

Table C-1 Modeled Emission Rates

| Source | Model ID | NO _x | | PM ₁₀ | | PM _{2.5} | | CO | |
|--|-----------|-----------------|--------|------------------|--------|-------------------|---------|-------|--------|
| | | 1-hr | Annual | 24-hr | Annual | 24-hr | Annual | 1-hr | 8-hr |
| | | lb/hr | tpy | lb/hr | tpy | lb/hr | tpy | lb/hr | lb/hr |
| CT #1 - Heat Recovery Steam Generator Stack ¹ | HRSG1 | 16.30 | 74.90 | 9.15 | 39.58 | 9.15 | 39.58 | 9.92 | 182.55 |
| CT #2 - Heat Recovery Steam Generator Stack ¹ | HRSG2 | 16.30 | 74.90 | 9.15 | 39.58 | 9.15 | 39.58 | 9.92 | 182.55 |
| Cooling Tower ² | CT01-CT06 | -- | -- | 0.10 | 0.42 | 3.5E-04 | 1.5E-03 | -- | -- |
| Auxilliary Boiler ³ | AUX | 2.00 | 2.00 | 0.25 | 0.50 | 0.25 | 0.50 | 4.00 | 4.00 |
| Fire Pump ^{4,5} | FIRE | 0.17 | 0.74 | 0.007 | 0.04 | 0.007 | 0.04 | 2.87 | 2.87 |
| Emergency Generator ^{4,5} | EGEN | 0.6 | 2.80 | 0.017 | 0.10 | 0.017 | 0.10 | 11.53 | 11.53 |

| Source | Model ID | NO _x | | PM ₁₀ | | PM _{2.5} | | CO | |
|--|-----------|-----------------|--------|------------------|----------|-------------------|-----------|-------|-------|
| | | 1-hr | Annual | 24-hr | Annual | 24-hr | Annual | 1-hr | 8-hr |
| | | g/s | g/s | g/s | g/s | g/s | g/s | g/s | g/s |
| CT #1 - Heat Recovery Steam Generator Stack ¹ | HRSG1 | 2.05 | 2.15 | 1.15 | 1.14 | 1.15 | 1.14 | 1.25 | 23.00 |
| CT #2 - Heat Recovery Steam Generator Stack ¹ | HRSG2 | 2.05 | 2.15 | 1.15 | 1.14 | 1.15 | 1.14 | 1.25 | 23.00 |
| Cooling Tower ² | CT01-CT06 | -- | -- | 0.0120 | 0.0120 | 4.410E-05 | 4.363E-05 | -- | -- |
| Auxilliary Boiler ³ | AUX | 0.25 | 0.06 | 0.03 | 0.01 | 0.03 | 0.01 | 0.504 | 0.504 |
| Fire Pump ^{4,5} | FIRE | 0.02 | 0.02 | 8.93E-04 | 1.18E-03 | 8.93E-04 | 1.18E-03 | 0.362 | 0.362 |
| Emergency Generator ^{4,5} | EGEN | 0.08 | 0.08 | 0.0021 | 0.0029 | 0.0021 | 0.0029 | 1.453 | 1.453 |

¹ - Emissions from the CTs reflect the emissions from startup and shutdown events for the annual averaging period for all pollutants. For the 24-hr averaging period for PM_{2.5} and PM₁₀, the emission rate reflects the addition of 6 lb of emissions (amount equivalent to one cold startup) and 24 hours of the maximum normal operation PM emission rate of 8.9 lb/hr. Similarly, the CO 8-hr emission rate reflects one cold startup, 1,381 lb of emissions (amount equivalent to one cold startup) and 8 hours of the maximum normal operation CO emission rate of 9.92 lb/hr. NO_x and CO startup and shutdown emissions for the 1-hr averaging period were modeled separately. Emissions associated with startup and shutdown are presented in Table D-2.

² - The emissions for the cooling towers represent the emissions per cell. There are six cells total.

³ - Emissions of PM_{2.5} and PM₁₀ from the Auxiliary Boiler represent 12 hrs./day of operation for the 24-hr average emission rate.

⁴ - Emissions of PM_{2.5} and PM₁₀ from the Fire Pump and Emergency Generator represent 1 hr./day of operation for the 24-hr average emission rate.

⁵ - Maximum 1-hr NO_x emissions from the Fire Pump and Emergency Generator were not used in the modeling analysis of 1-hr NO₂. For the 1-hr averaging period, annualized emissions were used for the emergency equipment. Please refer to Section 2.2.2 of the air quality modeling protocol included as Attachment 1 of this report for a discussion of treatment of intermittent emissions in the 1-hr modeling analyses.

Table C-2 Modeled Emission Rates - 1-hr Averaging Periods - Startup and Shutdown Scenarios

| Source | Model ID | NO _x | | CO | |
|--------------------------|----------------------|-----------------|------|---------|--------|
| | | 1-hr | | 1-hr | |
| | | lb/hr | g/s | lb/hr | g/s |
| CT Hot Startup Scenario | HRSG1HS - HRSG2HS | 28.51 | 3.59 | 278.79 | 35.13 |
| CT Warm Startup Scenario | HRSG1WS - HRSG2WS | 38.43 | 4.84 | 283.31 | 35.70 |
| CT Cold Startup Scenario | HRSG1CS - HRSG2CS | 48.36 | 6.09 | 1381.83 | 174.11 |
| CT Shutdown Scenario | HRSG1SD - HRSG2SD | 17.50 | 2.20 | 182.61 | 23.01 |

ATTACHMENT 2

Modeled Stack Parameters from Applicant's Report

Table D-1 Source Locations

| Source | Model ID | Location (UTM Zone 17) | | |
|---|-----------|------------------------|--------------|-----------|
| | | UTM Easting | UTM Northing | Elevation |
| | | <i>m</i> | <i>m</i> | <i>ft</i> |
| CT #1 - Heat Recovery Steam Generator Stack | HRSG1 | 517,364.49 | 4,417,182.45 | 717 |
| CT #2 - Heat Recovery Steam Generator Stack | HRSG2 | 517,327.15 | 4,417,166.73 | 717 |
| Cooling Tower ¹ | CT01-CT06 | 517,446.83 | 4,417,099.73 | 717 |
| Auxilliary Boiler | AUX | 517,394.53 | 4,417,228.58 | 717 |
| Fire Pump | FIRE | 517,372.54 | 4,417,150.63 | 717 |
| Emergency Generator | EGEN | 517,339.02 | 4,417,298.78 | 717 |

¹ - The cooling tower consists of 6 individual cells.

Table D-2 CT Worst Case Normal Operation Stack Parameters

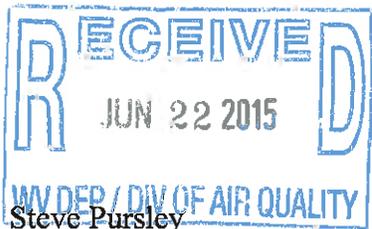
| Source | Model ID | Stack Height | Exhaust Temperature | Exhaust Exit Velocity | Stack Inner Diameter |
|---|-----------------------|--------------|---------------------|-----------------------|----------------------|
| | | <i>ft</i> | <i>°F</i> | <i>ft/s</i> | <i>ft</i> |
| CT Worst-Case CO Scenario - 1-hr and 8-hr - 100% Load CT Worst-Case NO _x Scenario - 1-hr and Annual - 100% Load | HRSG1_100 - HRSG2_100 | 175.0 | 161 | 64 | 18.5 |
| | HRSG1_100 - HRSG2_100 | 175.0 | 161 | 64 | 18.5 |
| CT Worst-Case PM _{2.5} /PM ₁₀ Scenario - 24-hr and Annual - 50% Load | HRSG1_50 - HRSG2_50 | 175.0 | 163 | 43 | 18.5 |
| CT PM _{2.5} /PM ₁₀ Scenario - 24-hr and Annual - 100% Load | HRSG1_100 - HRSG2_100 | 175.0 | 160 | 57 | 18.5 |

Table D-3 CT Startup/Shutdown Stack Parameters

| Source | Model ID | Stack Height | Exhaust Temperature | Exhaust Exit Velocity | Stack Inner Diameter |
|--------------------------|----------------------|--------------|---------------------|-----------------------|----------------------|
| | | <i>ft</i> | <i>°F</i> | <i>ft/s</i> | <i>ft</i> |
| CT Hot Startup Scenario | HRSG1HS - HRSG2HS | 175.0 | 161 | 50 | 18.5 |
| CT Warm Startup Scenario | HRSG1WS - HRSG2WS | 175.0 | 160 | 44 | 18.5 |
| CT Cold Startup Scenario | HRSG1CS - HRSG2CS | 175.0 | 160 | 38 | 18.5 |
| CT Shutdown Scenario | HRSG1SD - HRSG2SD | 175.0 | 161 | 56 | 18.5 |

Table D-4 Cooling Towers, Auxiliary Boiler, and Emergency Equipment Stack Parameters

| Source | Model ID | Stack Height | Exhaust Temperature | Exhaust Exit Velocity | Stack Inner Diameter |
|---------------------|-----------|--------------|---------------------|-----------------------|----------------------|
| | | <i>ft</i> | <i>°F</i> | <i>ft/s</i> | <i>ft</i> |
| Cooling Tower | CT01-CT06 | 60.0 | 66 | 19 | 40.0 |
| Auxilliary Boiler | AUX | 42.0 | 300 | 173 | 3.5 |
| Fire Pump | FIRE | 11.0 | 900 | 106 | 0.5 |
| Emergency Generator | EGEN | 13.0 | 900 | 229 | 1.5 |



June 19, 2015

VIA EMAIL AND
FEDERAL EXPRESS

Mr. Steve Pursley
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

057-00168

| | |
|----------|-------------------|
| FILE: | |
| COMPANY | Moundsville Power |
| FACILITY | Moundsville |
| REGION | 1 REG. 14030A |

**Reference: SUPPLEMENTAL COMMENTS –
Moundsville Power, LLC
Class II Administrative Update of Approved Air Permit
R14-0030**

Dear Mr. Pursley,

On April 22, 2015, Environmental Resource Management (“ERM”) submitted the present application for a Class II Administrative Update to the existing air permit (R14-0030) for the Moundsville Power Project. Moundsville Power requests this Class II Administrative Update pursuant to 45 CSR-13-4 to reflect changes in Project equipment and design that have evolved since the original Permit to Construct approval.

On June 8, 2015, Initial Comments were submitted on behalf of Ohio Valley Jobs Alliance (“OVJA”). In the Initial Comments, OVJA contended that the request for Class II Administrative Update is not justified under the applicable criteria of 45 CSR-13-4 and the requested changes to the existing air permit must be processed as a modification, if not major modification, of the Permit to Construct (R14-0030). The proposed modifications in Project equipment and design are substantial modifications that impact the emissions specified in the Permit Conditions. The net emission increases are based on unsubstantiated “engineering estimates” but, in any event, the estimated net emission increases in certain emission parameters are significant. The net increases in Regulated Air Pollutants will be substantial and present serious environmental justice concerns for an area already overburdened by pollution. Net increases in No_x and particulates exceed the 10 tons/yr limit and thus constitute a “modification” as defined in 45 CSR-13-2.17(a). On this basis alone, the request for Class II Administrative Update should be rejected.

Further, in the Initial Comments, OVJA contended that the application is presently insufficient and incomplete to warrant expedited review as a Class II Administrative Update. Significant information concerning the impact on emissions and on Best Available Control Technology (“BACT”) was not presented in the application, but was supposedly addressed in a CD submitted as Appendix 1. This CD was not available as part of the application at time of submission. Additionally, Moundsville Power indicated that a revised Air Quality Modeling Report was being provided separate from the application.

Given the fact that Appendix 1 and the revised Air Quality Modeling Report were not available as part of the application itself, OVJA reserved the right in the Initial Comments to submit more specific technical comments in Supplemental Comments once the information became available.

OVJA has now obtained and reviewed the Appendix 1 and the revised Air Quality Report and submits these Supplemental Comments. It is now apparent that Appendix 1, and the application itself, are insufficient and incomplete and fail to substantiate the “engineering estimates” of the net emissions increases and impact on BACT. Even if the “estimates” are accepted, the net increases in NO_x and particulates exceed the 10 tons per year limit and thus constitute a “modification” as defined in 45 CSR-13-2.17(a). Further, the net increases in Greenhouse Gas emissions (“GHG”) exceed the threshold of 75,000 tons per year for the purposes of regulation under 45 CSR 14-2.80.e.2. Finally, there is nothing in Appendix 1 to justify BACT for the net emissions increases.

For these reasons, and others articulated below, OVJA submits that the request for Class II Administrative Update should be denied. Alternatively, OVJA submits that the West Virginia Division of Air Quality (the “Department” or “WVDEP”) should reject the application as incomplete until the deficiencies are corrected and all relevant information is substantiated and produced. OVJA further requests that a new public notice be issued and public hearings be scheduled in this matter.

I. Appendix 1 Is Deficient And the Class II Administrative Update Should Be Rejected

In the application itself, Moundsville Power acknowledges that the proposed equipment and performance modifications for the construction turbines (“CT”), the associated Heat Recovery Steam Generators (“HRSGs”), the cooling towers and other facilities result in increases in certain emission parameters but characterizes these increases as “slight”. Moundsville Power acknowledges that several significant emissions parameters were based on “engineering estimates”, including NO_x, CO, VOCs, particulates (PM/PM₁₀/PM_{2.5}) and SO₂ (See Attachment J - Emissions Points Data Summary Sheet). The application itself provides no substantiation for these “engineering estimates”. In Attachment N – Supporting Emission Calculations, Moundsville Power merely asserts in summary terms:

Potential emissions from the Project’s emission sources were estimated using various calculation methodologies including vendor data, emission factors from USEPA’s Compilation of Air Pollutant Emission Factors (AP-42) publication, material balances, New Source Performance Standards (NSPS) emission standards, and/ or engineering calculations. Please refer to Appendix 1 of the application package for the CD containing vendor emissions and performance data, along with emission calculations demonstrating that the changes in emissions from these revisions qualify as a “Class II Administrative Update” under 45 CSR-13-4.

Although Moundsville Power suggests that documentation contained in the CD submitted as Appendix 1 supports these “engineering estimates” of the increases in emission parameters and BACT, Appendix 1 is clearly deficient and incomplete in these respects.

In Appendix 1, Moundsville Power merely presents summary tables of various current and proposed emissions levels for various pollutants under various operating conditions and for various elements of the emission unit. However, contrary to the representations in Attachment N, Appendix 1 wholly fails to provide any analysis or documentation of the calculation methodologies. Specifically, contrary to the representations in Attachment N, Appendix 1:

- Fails to provide specific vendor data;
- Fails to provide emission factors from US EPA’s Computation of Air Pollutant Emission Factors (AP-42);
- Fails to provide material balances;
- Fails to address New Source Performance Standard emission standards; and
- Fails to provide any substantiation for “engineering calculations” or the application of sound “engineering estimates.”

Accordingly, Appendix 1, and the application itself, fail to provide substantiation for the “engineering estimates” for either current pollutant emissions or for proposed net increased in pollutant emissions resulting from the requested equipment and performance modifications. The Class II Administrative Update application should be rejected.

II. The Estimated Net Emissions Increases For NO_x, Particulates and Greenhouse Gases Exceed Significant Threshold Limits

Even if the estimated emissions increases in Appendix 1 are accepted, the estimated results themselves indicate net emissions increases are significant and, for several parameters, exceed significant threshold limits.

In one summary table in Appendix 1, Moundsville Power reflects the annual emissions increases for the combined emissions units, that is the two CTs, the cooling towers and the fire pumps. The results are:

| <u>Regulated Air Pollutant</u> | <u>Total Change (tons/yr)</u> |
|--------------------------------|-----------------------------------|
| VOC | 3.46 |
| NO _x | 10.01 |
| CO | 6.31 |
| SO ₂ | .77 |
| PM | 12.94 |
| PM ₁₀ | 12.12 |
| PM ₂₅ | 11.76 |
| Pb | 1.33E-03 |

Based on these summary estimates, it is now clear that on a combined emissions unit basis, annual net increases for NO_x, PM, PM₁₀ and PM₂₅ all exceed the 10 tons per year threshold limit and thus constitute a “modification” as defined in 45 CSR-13-2.17.

As discussed in the Initial Comments, Marshall County is already significantly burdened by air pollution. According to the US EPA, NO_x and particulates exposures are directly linked to adverse health conditions. Here, not only are the net annual increases in NO_x, PM, PM₁₀ and PM₂₅ significant, the total combined annual emissions are significant as well. Based on the application and Appendix 1, the annual emissions from the combined emissions unit total 155.35 tons per year for NO_x, 82.27 tons per year for PM₁₀, 84.12 tons per yr for PM, 79.80 tons per year for PM₂₅.

Furthermore, CO₂ and CO_{2e} emissions for the Moundsville Power Project are likewise significant and the proposed increase in emissions is significantly above the threshold of 75,000 tons per year that would qualify the proposed changes to the power plant to be a “modification”. As such, the proposed changes to the Moundsville Power Project will undoubtedly have a significant negative impact on ambient air quality.

Based on Appendix 1, Moundsville Power estimates the total CO₂ and CO_{2e} emission on an annual basis, current and proposed, to be:

| <u>Pollutant</u> | <u>Current Total (tons/yr)</u> | <u>Proposed Total (tons/yr)</u> | <u>Increase (tons/yr)</u> |
|------------------------|------------------------------------|-------------------------------------|-------------------------------|
| CO ₂ | 2,237,821 | 2,394,927 | 157,105 |
| GHG(CO _{2e}) | 2,240,618 | 2,400,486 | 159,868 |

As of January 2, 2011, US EPA has determined that GHGs are subject to regulations. The US EPA has proposed various rules regulating CO₂ emissions from existing and new power plants but also continues to require a BACT analysis for GHG emissions from sources that are otherwise subject to PSD. Moundsville Power has failed to adequately address the increase in GHG emissions from the proposed changes to its power plant. Because the proposed changes to the Moundsville Power project will undoubtedly have a significant negative impact on ambient air quality, the WVDEP should deny Moundsville’s application, as set forth in 45 CSR 13-4.3.

In any event, it is now clear from Appendix 1 that the estimated increases on emissions for NO_x and particulates on a combined emissions unit basis, even if the estimates are accepted, are significant and exceed the limits in 45 CSR 13.2.17(a) (10 tons/year for any Regulated Air Pollutant) and thus constitute a “modification” as defined in 45 CSR-13.217. The Class II Administrative Update should be rejected on that basis alone. The emissions increases have a substantial and direct impact on public health in the area and should be subject to heightened regulatory scrutiny.

III. Moundsville Power Has Failed to Properly Justify BACT

In the original Permit to Construct application, Moundsville Power addressed Best Available Control Technology (“BACT”). The Permit to Construct provides specific conditions for BACT as a permit condition. (See Permit to Construct, Condition 1.0). In this Class II Administrative Update, Moundsville Power fails to substantiate BACT with respect to the proposed equipment and performance modifications and the resulting net emissions increases. Appendix 1 fails to provide any supporting documentations concerning BACT analysis.

Under federal and state regulations, permit conditions require use of BACT to limit emissions of regulated pollutants, including specifically NO_x, GHG and particulates, to the greatest extent feasible. US EPA has developed a “top-down” process to improve the application of the BACT selection criteria and provide consistency in establishing BACT. Since NO_x, particulates and GHG emissions, at least, exceed the net annual emissions threshold limits for the changes to be considered a “modification” rather than an “administrative update”, Moundsville Power should be held to a strict standard of establishing proper use of BACT technology to control these emissions to the maximum extent feasible. Moundsville Power has failed to justify BACT in the application and Appendix 1 offers nothing further in this analysis.

IV. The Revised Air Quality Modeling Report

Moundsville Power submitted a revised Air Quality Modeling Report in support of its request for a modification to its Permit to Construct. In the revised Air Quality Modeling Report, Moundsville Power confirms the OVJA’s concerns about NO_x emissions and ambient air quality. An analysis of the regional sources and the ambient air quality show that the 1-hour NO₂ NAAQS is predicted to be exceeded due to emissions from regional NO_x sources and this source. Moundsville Power should not be allowed to increase its NO_x emissions and contribute to an area where the 1-hour NAAQS is already being exceeded. While Moundsville Power states that its contribution to the NAAQS exceedance will be relatively small, it will be contributing some amount of NO_x. Moundsville Power refers to “long-standing USEPA policy” whereby permitting of a PSD source can proceed if the applicant can demonstrate that its contribution does not cause or contribute to the exceedance. Moundsville Power has failed to sufficiently refer to, identify and analyze how this policy applies to its contributions to the NAAQS exceedance, nor has it sufficiently demonstrated that its proposed increases in NO_x emissions will not contribute to NAAQS exceedances.

In addition, since the Moundsville Power facility triggers the requirements of the Prevention of Significant Deterioration (“PSD”) program, Moundsville Power must conduct an “additional impacts analysis” that assesses the impacts of air, ground and water pollution on soils, vegetation, and visibility caused by any increase in emissions of any regulated pollutant from the source or modification under review, and from associated growth. Associated growth is industrial, commercial, and residential growth that will occur in the area due to the source. See 40 CFR 52.21(o).

Air pollutants can affect vegetation through direct absorption through the foliage, or uptake from the soil of trace elements deposited in the soil. The effects of air pollution on vegetation can include visible damage to foliage and fruit, changes in metabolic function, adverse changes in plant activity, and crop yield reduction. The effects of air pollutants on vegetation fall into three categories: acute (short exposure to high concentration), chronic (lower concentration over months or years), and long term (abnormal changes to ecosystems and physiological alterations in organisms that occur gradually over very long time periods).

PSD requires that Moundsville Power include an evaluation of the effects of the project emissions on soils, vegetation and visibility. However, Moundsville Power did not conduct an evaluation of “additional impacts”, it merely made a conclusory statement that “the Project’s impact on soils, vegetation, and visibility will be minimal.” Air Quality Monitoring Report, at page 18. For this reason, OVJA submits that the request for Class II Administrative Update should be denied until Moundsville Power conducts a full analysis of the impacts its project will have on water, soils, vegetation, and other natural resources caused by the proposed increase in emissions of various regulated pollutants, as required by regulation.

V. The Need For Additional Comment Period/Public Hearings

Executive Order 12898 (“EO 12898”), “Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations”, was signed on February 11, 1994. EO 12898 established federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent, practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority populations and low-income populations.

In Marshall County, more than 16 percent of residents live below the poverty level. In Moundsville, between 20-30 percent of residents live below the poverty level, compared to approximately 14 percent nationally. As was fully set forth in the Initial Comments submitted on behalf of the OVJA on June 8, 2015, Marshall County residents are already suffering from high levels of air pollution, according to data from the Marshall County Health Department. The modifications proposed by Moundsville Power will significantly increase levels of particulate matter and NOx – two criteria pollutants with potentially serious health effects.

To date, Moundsville Power has not submitted an Environmental Justice Analysis of its proposed modifications to its permit or of the project in general. At least some of the

information associated with the Administrative Update application that should have been made public wasn't – and was not accessible without a direct request to the WVDEP. The lack of availability of pertinent information related to Moundsville Power's application is troubling because surrounding communities did not have access to sufficient information to evaluate the impacts of the proposed changes to the power plant. The WVDEP should subject Moundsville Power's application to the highest levels of scrutiny so as to minimize any emissions associated with the modification and should conduct a full Environmental Justice Analysis of the application because the proposed modifications to Moundsville Power plant will disproportionately affect low-income populations in an area already adversely affected by air pollution.

VI. Conclusion

The Class II Administrative Update should be rejected. The request for Class II Administrative Update is not justified under the applicable criteria of 45 CSR-13-4 and the requested changes to the existing air permit must be processed as a modification, if not major modification, of the Permit to Construct. The proposed modification in Project equipment and design are substantial modifications that significantly impact the emissions specified in the Permit Conditions. The net emission increases are based on unsubstantiated "engineering estimates" but, in any event, the estimated emissions increases in NO_x and particulates, at least, exceed the 10 tons/yr limit and thus constitute a "modification" as defined in 45CSR-13-2.17(a). Further, the net increases in GHG emissions exceed the threshold of 75,000 tons per year for purposes of regulation under 45 CSR 14-2.80.e:2.

Further, the application is presently insufficient and incomplete to warrant expedited review as a Class II Administrative Update. Appendix 1, and the application itself, are insufficient and incomplete and fail to substantiate the "engineering estimates" of the net emissions increases and impact on BACT.

Alternatively, the Department should reject the request for Class II Administrative Updates until the deficiencies are corrected and all relevant information is substantiated and produced. OVJA further requests that a new public notice be issued and public hearings scheduled in this matter.

Respectfully submitted,



Orla E. Collier, III
BENESCH FRIEDLANDER COPLAN &
ARONOFF, LLP
41 S. High Street, Suite 2600
Columbus, Ohio 43215
(614) 223-9300
ocollier@beneschlaw.com



June 8, 2015

Mr. Steve Pursley
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

**VIA EMAIL AND
FEDERAL EXPRESS**

651-00188

| | |
|----------|-------------------|
| FILE | |
| COMPANY | Moundsville Power |
| FACILITY | Moundsville |
| REGION | 1 REG. 14-0304 |

**Reference: INITIAL COMMENTS –
Moundsville Power, LLC
Class II Administrative Update of Approved Air Permit
R14-0030**

Dear Mr. Pursley,

These Initial Comments are submitted on behalf of Ohio Valley Jobs Alliance (“OVJA”), a public interest organization whose mission is to promote and protect jobs in the Ohio Valley region and related public interests. The OVJA has offices in Cameron, West Virginia and its members include residents, property owners and taxpayers in the area affected by the Moundsville Power Project (the “Project”), a proposed gas-fired combined cycle combustion turbine electric power plant and associated facilities to be located in Moundsville, Marshall County, West Virginia.

On April 22, 2015, Environmental Resources Management (“ERM”) submitted the present application for a Class II Administrative Update to the existing air permit (R14-0030) for the Moundsville Power Project. The Preconstruction Prevention of Significant Deterioration Air Permit (“Permit to Construct”) was originally approved by the West Virginia Division of Air Quality (“Department”) on November 21, 2014. Moundsville Power requests this Class II Administrative Update pursuant to 45 CSR-13-4 to reflect changes in Project equipment and design that have evolved since the original Permit to Construct approval.

OVJA submits in these Initial Comments that the request for Class II Administrative Update is not justified under the applicable criteria of 45 CSR-13-4 and the requested changes to the existing air permit must be processed as a modification, if not major modification, of the Permit to Construct (R14-0030) pursuant to 45 CSR-13 and other rules of the Department.

Further, OVJA submits that the application is presently insufficient and incomplete to warrant expedited review as a Class II Administrative Update. Significant information concerning the impact on emissions and on Best Available Control Technology (“BACT”) is not presented in the application but is supposedly addressed in a CD submitted as Appendix 1. This CD was not publicly available as part of the application at time of submission. OVJA has only recently obtained the CD. Additionally, Moundsville Power indicates that a revised air quality modeling report is being provided separate from the application.

Accordingly, OVJA reserves the right to submit more specific technical comments concerning the application in Supplemental Comments to follow. Alternatively, OVJA requests that the Department reject the present application as incomplete until all relevant information is publically available for analysis and comment.

I. Original Permit to Construct Conditions

On December 20, 2013, Moundsville Power submitted its original Permit to Construct application to construct the earlier designed and equipped Moundsville Power Project. This filing followed a “completeness” review by the Department and reflected a change in the GE combustion turbine model to Frame 7FA.04 and the addition of duct firing and changes to air quality modeling. The proposed Project required approval of an air permit under the Federal Prevention of Significant Deterioration (PSD) program (40 CFR 52.21) and under the West Virginia Department of Environmental Protection rules, 45 CSR 13 and 14, addressing permit requirements for construction, modification and operation of stationary sources of air pollutants.

Following review and comment, including comments submitted by the US EPA regarding averaging times and rolling yearly totals for certain emissions and BACT requirements, the Department issued the Permit to Construct (R14-0030) on November 21, 2014. The Permit to Construct includes defined Emissions Units, specifically the Combustion Turbines, the Heat Recovery Steam Generation, Cooling Tower and other equipment, with required control devices for each Emissions Unit, including Dry Low NOx Burners (DLNB), Selective Catalytic Reduction (SCR) and Oxidation Calayst (OC). (See Permit to Construct, Condition 1.0).

Section 4.0 of the Permit to Construct Conditions establishes maximum hourly, start-up/shut-down and combined annual emissions for the Emission Units. Section 4.1.4 establishes the following total combined annual emissions from the two combustion turbine/HRSG units.

| Pollutant | tons/year |
|----------------------------------|------------------|
| CO | 202.20 |
| NO _x | 140.20 |
| PM ⁽¹⁾ | 67.40 |
| PM ₁₀ ⁽¹⁾ | 67.40 |
| PM _{2.5} ⁽¹⁾ | 67.40 |
| SO ₂ | 4.80 |
| VOCs | 73.90 |
| H ₂ SO ₄ | 3.10 |
| Lead | 0.01 |
| GHGs (CO _{2e}) | 2,227,797.00 |
| Total HAPs | 11.90 |

¹ Includes both filterable and condensable particulate matter

Section 4.1.5 of the Permit To Construct conditions establishes the following PSD Pollutant limits and BACT for each combustion turbine/HRSG unit:

| PSD Pollutant | | | | | | | | | |
|---------------|----------------------|-----------------|----------------------|--|----------------------|----------------------|----------------------|------------------------------------|----------------------|
| CO | | NO _x | | PM _{2.5} /PM ₁₀ /PM ⁽¹⁾ | | VOCs | | GHGs | |
| Limit | Tech. ⁽²⁾ | Limit | Tech. ⁽²⁾ | Limit | Tech. ⁽²⁾ | Limit ⁽⁴⁾ | Tech. ⁽²⁾ | Limit (CO _{2e}) | Tech. ⁽²⁾ |
| 2.0 Ppmvd | OC, CP | 2.0 Ppmvd | DLNB, SCR, CP | 7.6 lb/hr | AF, NG, CP | 1ppmvd 2ppmvd | OC, CP | 7931b/ MW- hr ⁽³⁾ | NG, GE7FA |

- ¹ PM emission rates are given in total particulate (filterable + condensable) matter
- ² CP=Good Combustion Practices; SCR=Selective Catalytic Reduction; DLNB=Dry Low Nox Burners; OC=Oxidation Catalyst; AF=inlet air filtration; NG=Use of Natural Gas (or a Natural Gas/Ethane blend) as a fuel; GE7FA=use of GE Frame 7FA.04 turbines.
- ³ Based on combined cycle gross MW output, at 59° F ambient temperature, with no duct firing, evaporative cooling on, and the combustion turbines firing natural gas and operating at base load.
- ⁴ 1ppm limit applies when duct firing is not occurring. 2 ppm limit applies when duct firing is occurring. Ppm values are by volume, dry basis, corrected to 15% oxygen.

Moundsville Power now requests a Class II Administrative Update to the Permit to Construct under 45 CSR-13-4. The request is not warranted as the proposed modifications in Project equipment and design are substantial modifications that impact the emissions specified in the Permit Conditions.

II. Applicable Regulations

45 CSR-13 sets forth the procedures for construction, modification, relocation and operation of stationary sources of air pollutants. 45 CSR-13-5.1 provides that no person shall construct, modify or relocate any stationary source without a permit. Construction of a major stationary source or a major modification shall be subject to the pre-construction permit requirements of 45 CSR-14 or 45 CSR-19.

45 CSR-13-4.1 provides that upon the request of the permittee, the Secretary may revise or update a valid existing permit as necessary to incorporate any administrative update identified in subsection 4.2, provided that no administrative update to a general permit registration shall be inconsistent with the terms and conditions of the applicable general permit. At the Secretary's discretion, a determination may be made that an applicant is not eligible for an administrative update pursuant to Section 4. 45 CSR-13-4.1.a. Within sixty (60) days from receipt of a complete application, the Secretary shall take final action including determining that the requested change does not meet the criteria of an administrative update and should be reviewed under other provisions of the rule or other rules. 45 CSR-13-4.1.b.4. A denial is not subject to appeal while the permit which is issued is amended may be appealed under W. Va. Code §§ 22-5-14 or 22B-1-7.

Pursuant to 45 CSR-13-2.2, an “administrative update” shall mean any revision of a current and valid permit or general permit regulation which meets the provisions of 45 CSR-13-4. Administrative updates to a valid existing permit are authorized either as “Class I” or “Class II” Administrative Updates. 45 CSR-13-4.2. Class II Administrative Updates are limited under 45 CSR-13-4.2 which provides:

4.2.b. Class II administrative updates are limited to the following:

4.2.b.1. Change in a permit condition as necessary to allow changes in operating parameters, emission points, control equipment or any other aspect of a source which results in an increase or no change in the emission of any existing regulated air pollutant or any new regulated air pollutant; or

4.2.b.2. Other minor changes as may be allowed on a case-by-case basis by the Secretary.

In distinction to an “administrative update”, 45 CSR-13-2.17 defines a permit “Modification” as follows:

2.17. “Modification” for the purpose of this rule means any physical change in or change in the method of operation of any existing stationary source, excluding any emissions unit which meets or falls below the criteria delineated in Table 45-13B, which:

2.17.a. Results in an emissions increase of six (6) pounds per hour and ten (10) tons per year or more, or more than 144 pounds per calendar day, of any regulated air pollutant;

2.17.b. Results in an emissions increase of 2 pounds per hour or 5 tons per year of hazardous air pollutants considered on an aggregated basis;

2.17.c. Results in an increase in emissions of an air pollutant listed in Table 45-13A of 10 percent or more of the amount set forth in Table 45-13A at a facility which, prior to the physical change or change in method of operation, has the potential to emit the air pollutant at or above the amount set forth in Table 45-13A; provided that nothing in this subdivision shall affect the facility’s obligation to comply with 45CSR27;

2.17.d. Results in an increase in emissions of any air pollutant listed in Table 45-13A that would in turn result in total emissions of the air pollutant at the stationary source equal to or greater than the amounts in Table 45-13A; or

2.17.e. Results in any regulated air pollutant emissions increase for which the owner or operator of a source voluntarily chooses to obtain a modification permit pursuant to this rule, even though the owner or operator is not otherwise required to do so.

III. Significant Modifications In The Application

Moundsville Power proposes significant modifications to the equipment, performance and emissions of the Emissions Units specified in the Permit To Construct Conditions. These are:

1. Various changes in the emissions and performance profile of the GE Frame 7FA.04 combustion turbines ("CT") and the associated Heat Recovery Steam Generators ("HRSGs"). These changes include:

a) Increases in the maximum heat input of each CT from 2,087 MMBtu/hr to 2,232 MMBtu/hr;

b) Increases in the maximum duct firing rate for each HRSG from 72.1 MMBtu/hr to 187.61 MMBtu/hr;

c) A reduction in the exhaust stack height from 180.5 feet to 175 feet; and

d) Variations in exhaust gas flow rates and temperatures for each Emission Unit.

2. Changes in the design configuration, circulating water rate, make-up water rates, and Total Dissolved Solids ("TDS") concentrations. These changes include:

a) Use of a 6 cell Cooling Tower in a 1 x 6 configuration, instead of the original 10 cell Cooling Tower in a 2 x 5 configuration;

b) Increases in the diameter of each cell from 30 to 40 feet;

c) Changes in Cooling Tower design circulating water rate, make-up water rate and exhaust flow per cell;

d) Increases in the maximum design TDS concentrations of the Cooling Tower circulating water from 1800 mg/h to 2400 mg/h.

3. Increases in the fire water pump from 251 hp to 500 hp.

Moundsville Power acknowledges that these equipment and performance modifications result in increases in certain emission parameters but characterizes these increases as “slight”. Moundsville Power acknowledges that several significant emissions parameters were based on “engineering estimates”, including NO_x, CO, VOCs, particulates (PM/PM₁₀/PM_{2.5}) and SO₂ (See Attachment J- Emissions Points Data Summary Sheet). The application itself provides no substantiation for these “engineering estimates”. In Attachment N – Supporting Emission Calculations, Moundsville Power merely asserts in summary terms:

Potential emissions from the Project’s emission sources were estimated using various calculation methodologies including vendor data, emission factors from USEPA’s Compilation of Air Pollutant Emission Factors (AP-42) publication, material balances, New Source Performance Standards (NSPS) emission standards, and/ or engineering calculations. Please refer to **Appendix 1** of the application package for the CD containing vendor emissions and performance data, along with emission calculations demonstrating that the changes in emissions from these revisions qualify as a “Class II Administrative Update” under 45 CSR-13-4.

Notwithstanding the fact that the “engineering estimates” of the emission increases are unsubstantiated in the application, Moundsville Power’s estimated results themselves indicate the net emissions increases are significant.

Specifically, in the Notice (Attachment P), Moundsville Power represents that the estimated net increases on Regulated Air Pollutants will be 10.01 tons per year of nitrogen oxides, 6.31 tons per year of carbon monoxide, 159,868 tons per year of carbon dioxide equivalents, 3.46 tons per year of volatile organic compounds, 12.94 tons per year of particulate matter, 0.77 tons per year of sulfur dioxide, 0.001 tons per year of lead, and 1.15 tons per year of hazardous air pollutants.

These estimated net increases in Regulated Air Pollutants are not “slight” or insignificant. Indeed, the net increases of 10.01 tons per year of NO_x and 12.94 tons per year of particulate matter exceed the limits specified in 45 CSR-13-2.17(a) (10 tons/year for any Regulated Air Pollutant) and thus constitute a “modification” as defined in 45 CSR-13-2.17

Moundsville Power requests Permit Condition modifications for virtually all pollutants. Moundsville Power request these modifications to Section 4.1.4 of the Permit Conditions:

| Pollutant | Tons/year | |
|----------------------------------|--------------|-----------|
| CO | 202.20 | 208.15 |
| NO _x | 140.20 | 149.81 |
| PM ⁽¹⁾ | 67.40 | 79.15 |
| PM ₁₀ ⁽¹⁾ | 67.40 | 79.15 |
| PM _{2.5} ⁽¹⁾ | 67.40 | 79.15 |
| SO ₂ | 4.80 | 5.55 |
| VOCs | 73.90 | 77.28 |
| H ₂ SO ₄ | 3.10 | 3.57 |
| Lead | 0.01 | |
| GHGs (CO _{2e}) | 2,227,797.00 | 2,387.593 |
| Total HAPs | 11.90 | 13.06 |

¹ Includes both filterable and condensable particulate matter

On an annual basis, and taking into account combined Emissions Units, the impact on emissions is not insignificant for several parameters. Table 3 of the application provides a comparison of current and proposed emissions and increase on an annual basis.

Table 3. Comparison of Current and Proposed *Annual* Emission Rates

| Pollutant | Current | | Proposed | | Increase | |
|--|----------------------|------------------------|----------------------|------------------------|----------------------|------------------------|
| | 1 CT/HRSG tons/yr | 2 CTs/HRSGs tons/yr | 1 CT/HRSG tons/yr | 2 CTs/HRSGs tons/yr | 1 CT/HRSG tons/yr | 2 CTs/HRSGs tons/yr |
| VOC | 23.1 | 46.3 | 24.8 | 49.7 | 1.7 | 3.4 |
| NO _x | 66.6 | 133.2 | 71.4 | 142.8 | 4.8 | 9.6 |
| CO | 40.5 | 80.9 | 43.4 | 86.9 | 3.0 | 6.0 |
| SO ₂ | 2.4 | 4.8 | 2.8 | 5.6 | 0.4 | 0.8 |
| PM/PM ₁₀ /PM _{2.5} | 33.1 | 66.2 | 39.0 | 78.0 | 5.9 | 11.7 |
| Pb | 0.004 | 0.01 | 0.005 | 0.01 | 0.001 | 0.001 |

Regarding particulate matter (PM/PM₁₀/PM_{2.5}) emissions, these emissions on a combined Emissions Unit basis increase from 66.2 tons/yr to 78.0 tons/yr, an estimated increase of 11.7 tons/yr. This increase again exceeds the ten (10) tons/yr criteria for any regulated pollutant thus again constituting a “modification” under 45 CSR-13-2.17(a). These combined Emissions Unit estimates do not include increases in the PM and PM₁₀ emissions from the Cooling Tower or fire water pump. (See Tables 4 and 5).

NO_x emissions on a combined Emissions Unit basis are estimated to increase from 133.2 tons/yr to 142.8 tons/yr, an annual combined Emissions Unit increase of 9.6 tons/yr. Adding the increase in NO_x emission for the fire water pump (.37 tons/yr) increases the overall estimated NO_x emission for the facility to 9.97 tons/yr again extremely close to the 10 ton/yr figure to constitute a “modification” under 45 CSR-13-2.17(a).

IV. Impact on Nearby Residents

The impact of the increased pollutants on local residents, including members of the OVJA, is significant. Marshall County residents are already subject to high levels of air pollution, according to data from the Marshall County Health Department. The modifications proposed by Moundsville Power will significantly increase levels of particulate matter and NO_x – two criteria pollutants with potentially serious health effects.

With respect to particulate matter (PM/PM₁₀/PM_{2.5}) emissions, Moundsville Power proposes to increase these emissions, on a combined Emissions Unit basis, from 66.2 tons/yr to 78.0 tons/yr, an estimated increase of 11.7 tons/yr.

According to the U.S. EPA, “exposure to particulate matter is directly linked to a multitude of health problems, including deleterious effects on a person’s lung and heart. Small particles of concern include “inhalable coarse particles” (such as those found near roadways and dusty industries), which are larger than 2.5 micrometers and smaller than 10 micrometers in diameter; and “fine particles” (such as those found in smoke and haze), which are 2.5 micrometers in diameter and smaller.

Particle pollution - especially fine particles - contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:

- premature death in people with heart or lung disease,
- nonfatal heart attacks,
- irregular heartbeat,
- aggravated asthma,
- decreased lung function, and
- increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.”

NO_x emissions on a combined Emissions Unit basis are estimated to increase from 133.2 tons/yr to 142.8 tons/yr, an annual combined Emissions Unit increase of 9.6 tons/yr. Adding the increase in NO_x emission for the fire water pump (.37 tons/yr) increases the overall estimated NO_x emission for the facility to 9.97 tons/yr again extremely close to the 10 ton/yr figure to constitute a “modification” under 45 CSR-13-2.17(a). According to the U.S. EPA, “current scientific evidence links short-term NO₂ exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between breathing elevated short-term NO₂ concentrations, and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma.”

According to a Marshall County Needs Assessment conducted in 2011 by the Marshall County Health Department, Marshall County is already suffering from high levels of air pollution – some of the highest in the state. “According to the 2009 America’s Health Rankings,

WV is the state ranked 46th in occupational fatalities and air pollution. Health studies have shown a significant association between exposure to fine particles and premature death from heart or lung disease. Fine particles can aggravate heart and lung diseases and have been linked to effects such as cardiovascular symptoms; cardiac arrhythmias; heart attacks; respiratory symptoms; asthma attacks and bronchitis.” Marshall County Needs Assessment at 11. Further, “[p]hysical environment relating to unhealthy air due to ozone days; pollution particulate matter days ... ranked Marshall County 52nd [out of 55 counties] in the state.” Marshall County Needs Assessment at 17.

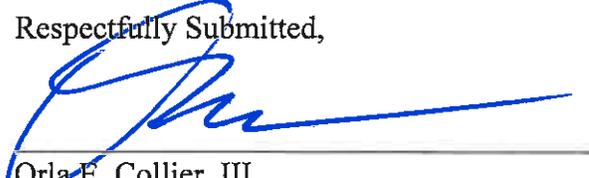
Allowing Moundsville Power to significantly increase its emissions will directly harm nearby residents, including members of the OVJA, and will allow Moundsville Power to contribute even more pollution to an area where residents are already subjected to high levels of pollution. Moundsville Power’s request for increased emissions presents serious environmental justice concerns.

V. Conclusion

OVJA submits that the request for Class II Administrative Update is not justified under the applicable criteria of 45 CSR-13-4 and the requested changes to the existing air permit must be processed as a modification, if not major modification, of the Permit To Construct (R14-0030). The proposed modifications in Project equipment and design are substantial modifications that impact the emissions specified in the Permit Conditions. The net emission increases are based on unsubstantiated “engineering estimates” but, in any event, resulting net emission increases in certain emission parameter are significant. Based on the Public Notice (Attachment P), the net increases in Regulated Air Pollutants will be substantial and present serious environmental justice concerns for an area already overburdened by pollution. Net increases in No_x and particulates exceed the 10 tons/yr limit and thus constitute a “modification” as defined in 45 CSR-13-2.17(a). On this bases alone, the request for Class II Administrative Update should be rejected.

Additionally, the application itself fails to substantiate the net impact resulting from the proposed modifications on Best Available Control Technology and air quality modeling. There are only vague and summary references to the CD (Appendix 1) and reference to a separate air quality report. OVJA requests that the Department reject the application until all relevant information is publicly available for analysis and comment. OVJA reserves the right to provide additional technical comments in Supplemental Comments to follow.

Respectfully Submitted,



Orla E. Collier, III
BENESCH, FRIEDLANDER, COPLAN &
ARONOFF LLP
41 South High Street, Suite 2600
Columbus, OH 43215
(614) 223-9300
ocollier@beneschlaw.com

OEC:tsh



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

June 4, 2015

Jon Williams
333 Ganson Street
Buffalo, NY 14203

RE: Application Status: Incomplete
Moundsville Power, LLC
Moundsville Plant
Permit No. R14-030A
Plant ID No. 051-00188

Dear Mr. Williams:

Your application for a class II administrative update for a natural gas fired electric generating plant was received by this Division on April 23, 2015 and assigned to the writer for review. After initial review of said application, it has been determined that the application as submitted is incomplete based on the following items:

1. Please submit a \$1,000 NSPS fee.

Application review will not commence until the application has been deemed to be technically complete. Failure to respond to this request in a timely manner may result in the denial of the application. Should you have any questions, please contact me at (304) 926-0499 ext. 1218.

Sincerely,

Steven R. Pursley, PE
Engineer

c: NPRO

NON CONFIDENTIAL



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

June 4, 2015

Jon Williams
333 Ganson Street
Buffalo, NY 14203

RE: Application Status: Incomplete
Moundsville Power, LLC
Moundsville Plant
Permit No. R14-030A
Plant ID No. 051-00188

Dear Mr. Williams:

Your application for a class II administrative update for a natural gas fired electric generating plant was received by this Division on April 23, 2015 and assigned to the writer for review. After initial review of said application, it has been determined that the application as submitted is incomplete based on the following items:

1. Please submit a \$1,000 NSPS fee.

Application review will not commence until the application has been deemed to be technically complete. Failure to respond to this request in a timely manner may result in the denial of the application. Should you have any questions, please contact me at (304) 926-0499 ext. 1218.

Sincerely,

Steven R. Pursley, PE
Engineer

c: NPRO

NON CONFIDENTIAL

**Environmental
Resources
Management**

200 Princeton South, Ste. 160
Ewing, NJ 08628
(609) 895-0050 (telephone)
(609) 895-0111 (fax)

www.erm.com



VIA FedEx

4 May 2015

Mr. Steve Pursley
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Reference: Moundsville Power, LLC
Class II Administrative Update of Approved Air Permit
Plant ID No. 051-00188
Application No. R14-0030A
Original Affidavit for Class I Legal Advertisement

Dear Mr. Pursley:

On behalf of Moundsville Power, LLC (Moundsville Power), Environmental Resources Management, Inc. (ERM) is submitting the original affidavit for the Class I legal advertisement associated with the above-referenced application for a Class II Administrative Update to the existing air permit for Moundsville Power's proposed gas-fired combined-cycle combustion turbine electric power plant. The plant is located in Moundsville, Marshall County, WV.

The Class I legal advertisement was published in the *Moundsville Daily Echo* on Tuesday, April 28, 2015.

Please call me at (609) 403-7518 or Mr. Jon Perry of ERM at (609) 403-7505 if you have any questions or need any additional information.

Sincerely,

William M. Hanna III, P.E.
Partner

Enclosure (Original Affidavit for Class I Legal Advertisement)

NON-CONFIDENTIAL



(304) 845-2660
P.O. BOX 369
MOUNDSVILLE
WEST VIRGINIA
26041



AFFIDAVIT OF PUBLICATION

STATE OF WEST VIRGINIA,
COUNTY OF MARSHALL, to wit

I, Melanie S. Murdock being first duly sworn upon my oath, do depose and say:

- that I am Legal Advertising Manager of the MOUNDSVILLE DAILY ECHO, a Republican newspaper;
- that I have been duly authorized to execute this affidavit;
- that such newspaper has been published for over 119 years, is regularly published afternoons daily except Saturdays and Sundays, for at least fifty weeks during the calendar year, in the municipality of Moundsville, Marshall County, West Virginia.
- that such newspaper is a newspaper of "general circulation" as defined in Art. 3, Chap. 59 of the Code of West Virginia 1931 as amended, within Moundsville and Marshall County;
- that such newspaper averages in length four or more pages, exclusive of any cover, per issue;
- that such newspaper is circulated to the general public at a definite price or consideration;
- that such newspaper is a newspaper to which the general public resorts for passing events of a political, religious, commercial and social nature and for current happenings, announcements, miscellaneous reading matters, advertisements and other notices;
- and that the annexed notice described as follows:

Legal Advertisement

PARTY(ies)

Air Quality Permit / State Route 2

NATURE (and agency if heard before one)

CERTIF-BILL TO

ERN
Merritt McGlynn
200 Princeton South Corporate Center
Suite 160
Ewing, NJ 08628

WAS PUBLISHED IN-SAID NEWSPAPER AS FOLLOWS

| Times | Dates |
|-------|----------------|
| 1 | April 28, 2015 |

| | |
|----------|---------------------|
| BY WORDS | PUBLICATION CHARGES |
| 297 | \$34.16 |

(signed) Melanie S. Murdock

NOTARIZATION

Taken, sworn and subscribed before me this 28th
day of April 2015

Notary Public

Amy McGlynn

Moundsville Daily Echo--PAGE THREE

LEGAL ADVERTISEMENT
AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Moundsville Power, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Class II Administrative Update to the approved Air Permit-to-Construct (R14-0030), for an electric power generation facility located on State Route 2, south of Moundsville, in Marshall County, West Virginia. The latitude and longitude coordinates are: 39.90447 and -80.79707. The applicant estimates the net increase in potential to discharge the following Regulated Air Pollutants will be 10.01 tons per year of nitrogen oxides, 6.31 tons per year of carbon monoxide, 159,868 tons per year of carbon dioxide equivalent emissions, 3.46 tons per year of volatile organic compounds, 12.94 tons per year of particulate matter, 0.77 tons per year of sulfur dioxide, 0.001 tons per year of lead, and 1.15 tons per year of hazardous air pollutants. Startup of operation is expected to occur in the 1st quarter of 2018. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice. Any questions regarding this permit application should be directed to the DAQ at (304) 926-6499, extension 1227, during normal business hours.

Dated this the 28th day of April, 2015.

By: Moundsville Power, LLC
Jon M. Williams
Managing Member
1214 3rd Street
Box 1138
Moundsville, West Virginia 26041
PUBLISH: April 28, 2015.

NON CONFIDENTIAL



Pursley, Steven R

From: Rice, Jennifer L
Sent: Friday, May 01, 2015 9:15 AM
To: jmwilliams@moundsville-power.com
Cc: Pursley, Steven R; McKeone, Beverly D
Subject: WV DAQ Permit Application Status for Moundsville Power, LLC

Categories: Red Category

**RE: Application Status
Moundsville Power LLC
Moundsville Facility
Plant ID No. 051-00188
Application No. R14-0030A**

Mr. Williams,

Your application for a Class II Administrative Update permit for the Moundsville facility was received by this Division on April 23, 2015, and was assigned to Steve Pursley. The following item was not included in the initial application submittal:

Original affidavit for Class I legal advertisement not submitted.

This item is necessary for the assigned permit writer to continue the 30-day completeness review.

Within 30 days, you should receive a letter from Steve Pursley stating the status of the permit application and, if complete, given an estimated time frame for the agency's final action on the permit.

Any determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit decision.

Should you have any questions, please contact the assigned engineer, Steve Pursley, at 304-926-0499, extension 1218.

NON-CONFIDENTIAL

**Jennifer Rice
WV Dept. of Environmental Protection**

Pursley, Steven R

From: Adkins, Sandra K
Sent: Friday, May 01, 2015 10:35 AM
To: Pursley, Steven R
Subject: Moundsville Power LLC/Permit Application Fee
Categories: Red Category

This is the receipt for payment received from:

Moundsville Power LLC, check number 1008, dated April 10, 2015, \$300.00
Moundsville R14-0030A id no 051-00188

OASIS Deposit No CR 1500121343 May 1, 2015

NON-CONFIDENTIAL