



west virginia department of environmental protection

Division of Air Quality
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Earl Ray Tomblin, Governor
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FINAL DETERMINATION

for the

CONSTRUCTION

of

**Moundsville Power, LLC's
Moundsville Combined Cycle Power Plant**

located in

Moundsville, Marshall County, WV.

Permit Number: R14-0030
Facility Identification Number: 051-00188

Date: November 20, 2014

BACKGROUND INFORMATION

Application No.: R14-0030
Plant ID No.: 051-00188
Applicant: Moundsville Power, LLC
Facility Name: Moundsville Power Plant
Location: Marshall County
NAICS Code: 221112
Application Type: PSD Major Construction
Received Date: October 7, 2013
Engineer Assigned: Steven R. Pursley
Fee Amount: \$14,500
Date Received: October 10, 2013
Complete Date: May 14, 2014
Due Date: November 10, 2014
Applicant Ad Date: December 26, 2013
Newspaper: *The Intelligencer*
UTM's: Easting: 517.3 km Northing: 4,417.2 km Zone: 17
DAQ Ad Date: October 9, 2014
Newspaper: *Moundsville Daily Echo*

On October 9, 2014 the West Virginia Division of Air Quality (DAQ) went to public notice in the above noted newspaper with a preliminary determination to issue the Prevention of Significant Deterioration (PSD) permit R14-0030 to Moundsville Power, LLC for the proposed construction of a natural gas fired, combined cycle electric generation facility in Moundsville, Marshall County WV. On this date, a preliminary determination/fact sheet and draft permit were made available to the applicant, the public (documents available for review at the DAQ Main Office and the Northern Panhandle Regional Office), and the Environmental Protection Agency (EPA). Comments were required to be submitted by 5:00 PM on November 10, 2014.

This document will summarize the comments received on the draft permit, any actions taken as a result of the comments, substantive changes, to the draft permit, and the final determination of the DAQ regarding R14-0030.

COMMENTS

During the public comment period comments were received from the parties listed below. Each will be briefly summarized here. All original comments and associated DAQ responses are located in the file.

Applicant Comments

On November 7, 2014 via email Moundsville Power provided comments on the draft permit. The changes requested by Moundsville Power addressed mainly clarifications and correction of typographical errors. No substantive changes to the intent of the draft permit were requested or made.

EPA Comments

On November 6, 2014 via email, EPA provided 18 comments concerning the preliminary determination, the draft permit and modeling. The comments addressed best available control technology (BACT), compliance procedures, performance testing, and modeling. The DAQ responded to these comments on November 20, 2014.

CHANGES TO DRAFT PERMIT

A review of comments resulted in changes to the draft permit. The substantive changes are summarized below with the modified or added section of the permit in brackets.

Changes due to comments from Moundsville Power:

- [4.1.3] The fifth column in the table was changed to clarify that the emissions limit is for the two turbine/HRSG units combined. Additionally, the VOC emissions incorrectly copied the PM emissions from the preliminary determination. They were corrected.
- [4.1.6, 4.1.16, 4.2.8, 4.2.9, and 4.4.10] All of these changes concerned the use of the terms "fuel" and "natural gas" or "natural gas and ethane mix". In order to avoid any confusion and be consistent, Moundsville Power proposed defining the term "fuel" as either natural gas or the natural gas/ethane mix referenced in the preliminary determination and draft permit and using that term throughout the permit.

Changes due to comments from USEPA:

- [3.2.1] Condition 3.2.1 was added to address USEPA comments regarding averaging times and rolling yearly totals.
- [4.1.2] Condition 4.1.2 was modified to establish a 1 hour averaging time for NO_x and CO.
- [4.1.4] Language was added to clarify how compliance with the emission limits would be determined, specifically as it relates to using the hourly limits to determine compliance with annual limits.
- [4.1.5.1] This condition was added to address USEPA comments regarding BACT requirements for startup and shut down of the turbine/HRSG units.
- [4.1.7] This condition was changed to exclude startup and shutdown periods when operation of the control devices is impossible due to operating temperature limitations.
- [4.1.9] This condition was changed to exclude startup and shutdown periods.
- [4.2.3] This condition was changed to add requirements for the fuel flow monitors.

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- [4.3.1] The reference to NO_x was removed from the table to avoid confusion. Additionally, Test Method 201 A was added for testing filterable PM_{10/2.5}.
- [4.3.6] This condition was added to address USEPA's comments regarding NO_x and SO₂ testing.
- [4.3.4] This condition was deleted and replaced by 4.3.6, 4.1.24.1 and 4.1.31.1.

Additionally, USEPA commented that although Moundville Power included in the application a BACT analysis for the circuit breakers, it was not addressed in the Preliminary Determination. It was not addressed in the Preliminary Determination because emissions from circuit breakers include only a trivial amount of GHG's (specifically 5.1 lbs of SF₆ per year, which is equivalent to 58 tpy CO_{2e}). However, for completeness sake the following is a BACT analysis for the circuit breakers:

Circuit Breakers

Sulfur hexafluoride (SF₆) gas is typically used in the circuit breakers associated with electricity generation equipment. Potential sources of SF₆ emissions include equipment leaks from equipment, releases from gas cylinders used for equipment maintenance and repair operations, and SF₆ handling operations. Moundville Power identified two technologies to address SF₆ emissions.

- 1) Use of circuit breakers that contain no SF₆.
- 2) Use of modern SF₆ based circuit breakers designed to be totally enclosed.

According to Moundville Power *"Potential alternatives to SF6 were addressed in the National Institute of Standards and Technology (NTIS) Technical Note 1425, Gases for Electrical Insulation and Arc Interruption: Possible Present and Future Alternatives to Pure SF6.17. According to this document, SF6 is a superior dielectric gas for nearly all high voltage applications. It is easy to use, exhibits exceptional insulation and arc-interruption properties, and has proven its performance by many years of use and investigation. It is clearly superior in performance to the air and oil insulated equipment used prior to the development of SF6-insulated equipment. The report concluded that although "...various gas mixtures show considerable promise for use in new equipment, particularly if the equipment is designed specifically for use with a gas mixture... it is clear that a significant amount of research must be performed for any new gas or gas mixture to be used in electrical equipment." Therefore, Moundville Power believes there are currently no technically feasible options to the use of SF6.*"

Therefore, Moundville Power proposed using totally enclosed SF₆ circuit breakers and implementing a Leak Detection and Repair program. WVDAQ accepts this proposal as BACT.

NOTIFICATIONS

Upon the Director's acceptance of this final determination, a copy of the final determination and final permit will be sent to the Northern Panhandle Regional Office for public review. Each party who commented on the draft permit (Moundsville Power and USEPA) will also receive a copy of this final determination and the final permit.

FINAL DETERMINATION

It is the view of the writer that, after consideration of all comments received, all available information indicates Moundsville Power's proposed construction of a natural gas fired combined cycle electric generation facility should meet the emission limitations and conditions set forth in the permit and should comply with all currently applicable state and federal air quality management rules and standards. It is, therefore, the recommendation of the undersigned that the WVDEP-DAQ make a final determination to issue the attached permit R14-0030.



Steven R. Pursley, PE
Engineer

11-20-14

November 20, 2014

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