
Midland Power Station, LLC

RESPONSE TO COMMENTS DOCUMENT

December 21, 2011

PERMIT No. 24-11B



Rick Snyder, Governor

Air Quality Division Michigan Department of Environmental Quality

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I. PUBLIC PARTICIPATION PROCESS

Permit to Install application No. 24-11B is for Midland Power Station, LLC located on Waldo Road, Midland, Michigan. The public participation process involved providing information for public review including a fact sheet and proposed permit terms and conditions, and a public comment period on the proposed permit.

On November 4, 2011, copies of the Notice of Air Pollution Comment Period and Public Hearing, the Fact Sheet, the draft terms and conditions were placed on the Department of Environmental Quality (DEQ or Department), Air Quality Division (AQD) Home Page (<http://www.michigan.gov/air>). Also on that date, a notice announcing the Public Comment Period and tentative date of a Public Hearing, if one was requested, was placed in the *Midland Daily News*. In addition, the notice was published on November 21, 2011, in the MDEQ Calendar. The notice provided pertinent information regarding the proposed action; the locations of available information; a telephone number to request additional information; the date, time, and location of the provisional Public Hearing; the closing date of the Public Comment Period (to be extended until the close of a hearing if one was requested); and the address where written comments were being received.

Written comments were received during the Public Comment Period from three commenters. Two comments were in support of the proposed facility and the third was a letter from the United States Environmental Protection Agency (EPA) with three comments on the draft permit.

The remainder of this document is a listing of actions taken by the Department, the significant comments received regarding the proposed permit, and the Department's response. The first section discusses the changes to the final permit terms and conditions and the basis for each change. The last section discusses the Department's response to all other significant comments that did not result in changes to the final permit.

II. SUMMARY OF CHANGES TO THE PERMIT

Two changes were made to the permit.

Change to the Permit

The AQD has made the following change to the permit because Midland Power Station shares the State Registration Number A4043 with other corporations at the site. In the recordkeeping condition SC VI.2. for the flexible group FGFACILITY, the word "permittee" has been replaced by the words "stationary source" to indicate that Midland Power Station is responsible for maintaining records of emissions solely from the Midland Power Station equipment.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the end of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1201)

2. The stationary source shall keep the following information on a monthly basis for FGFACILITY:
- a) Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
 - b) Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months.

If stack test results for FGFACILITY exist for any of the aforementioned pollutants, those stack test results may be used to estimate pollutant emissions subject to the approval of the AQD. All records shall be kept on file and made available to the Department upon request.
 (R 336.1205(3))

Comment

One comment, from the EPA, indicated that it is not clear in the draft permit if the FGFACILITY limit also includes the emissions from the Dow Coming Midland facility. The entire comment is presented as the first comment in Section III of this Response to Comments.

Change to the Permit

On page 46 of 50, the permit includes the Flexible Group Summary Table. For FGFACILITY, both the Flexible Group Description and the Associated Emission Unit IDs entries in the table have been modified to add information clearly indicating MDEQ's intent to include the Dow Corning Midland Plant emissions in the facility's source-wide emission limits.

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment. This includes all emission units in this permit to install and in all permits for the facility identified by State Registration Number A4043	All grand-fathered equipment and exempt equipment. and emission units in this permit to install and in all permits for the facility identified by State Registration Number A4043

III. SUMMARY OF SIGNIFICANT COMMENTS

Three comments were received from the EPA and are presented in their entirety. The EPA's comment letter included the following introductory paragraph:

Based on our review of the draft permit, we have the following comments. We provide these comments to help ensure that the project meets federal Clean Air Act requirements, that the permit will provide necessary information so that the basis for the permit decision is transparent and readily accessible to the public, and that the permit record provides adequate support for the decision.

Comment

On page 47 of the draft permit, the source-wide permit condition for the Flexible Group FGFACILITY limits the HAPs to below 10 tons per year for an individual HAP and 25 tons per year for aggregated HAPs. However, it is not clear in the draft permit if the FGFACILITY limit also includes the emissions from the Dow Coming Midland facility. Part 63.2 defines a major source of HAPs as, "any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants ", the HAPs limit would have to include the HAPs emissions from both the proposed Midland Power Station and the existing Dow Coming Midland plant to ensure that the facility remains an area source.

AQD Response

AQD considers the HAPs limits to be inclusive of emissions from both the proposed Midland Power Station and the existing Dow Coming Midland Plant and will enforce the combined HAPs limits. The limits in Permit to Install No. 24-11B are less than 9.9 tpy for each individual HAP and less than 24.9 tpy for aggregate HAPs. The permit states that these limits apply source-wide, meaning inclusive of the Dow Corning Midland Plant and the Midland Power Station. MDEQ has made the changes to the permit listed in Section II of this Response to Comments to support this determination.

Emissions for the MPS project were based primarily on data for direct combustion of wood, not for combustion of synthesis gas from the gasification of biomass. One challenge encountered in the review of this project is the lack of emissions data from similar operating facilities. Some of the limits use a recent stack test conducted on a smaller, demonstration sized gasifier by the manufacturer, Heat Transfer International (HTI) of Grand Rapids, Michigan. The HTI data were used to evaluate potential emissions based on the heat input rate to the pilot test equipment, and were scaled up to the production equipment size proposed by MPS. Another emissions information source is EPA which compiles databases of emissions testing results. There is a sufficient collection of data from sources which directly combust wood or other biomass to determine with confidence the maximum possible emissions rates from the proposed biomass gasification/syngas combustion process proposed by MPS.

Where possible, emission limits have been based on the lowest expected emission rates. Where the best available data required the use of higher than expected emission rates to set emission limits in the permit, the higher rates were evaluated for compliance with the health based emissions regulations. If a higher emissions rate, such as one from direct combustion of wood, could be demonstrated to be in compliance with the standards, then a lower rate, such as would be expected from the gasifier/oxidizer process, will certainly be in compliance with the standards.

The emission limits in the permit for VOCs (which include organic HAPs) are 8.4 tons per year for each of the three gasifiers. Page 5 of the Fact Sheet includes an analysis of the air pollution control technology the MPS facility proposes to operate to comply with Michigan's air toxics rules: "The gasification process itself minimizes metallic hazardous air pollutants and the thermal oxidizer design minimizes emissions of organic hazardous air pollutants through a combustion temperature of 1600 °F or hotter and flue gas recirculation. Additional hazardous air pollutant emission reduction is achieved through the use of the WESP. The emission limits included in the draft permit are based on the use of these technologies which satisfy the TBACT requirements."

Lack of data is a reality that extends beyond this permit review. One recent example is found in EPA's December 2, 2012 draft preamble to the proposed amendments to 40 CFR Part 63, Subpart DDDDD, MACT for boilers at major sources of HAPs. EPA requests the submission of additional data for emissions of CO, a criteria pollutant used as an indicator of efficient combustion which reduces emissions of organic HAPs. The rulemaking process for subpart DDDDD has continued for several years, and data collection has continued throughout that process. For PTI No. 24-11B, the lack of sufficient data to definitively quantify HAPs emissions from the biomass gasification system is a constraint under which the permit review was completed.

The permit includes testing requirements for VOCs. The actual emission test results, along with emissions reported by the Dow Corning Midland Plant, will provide information as to the source-wide HAPs emissions.

Comment

Related to comment #1, we understand that Dow Corning sent a letter on March 28, 2011, to MDEQ to request removal of the synthetic minor HAP limits at the Midland site, thus making it subject to Maximum Achievable Control Technology (MACT) for HAPs emissions. Please confirm whether the requested permit action has been taken by MDEQ and explain how that relates to the limits in the draft Midland Power Station permit.

AQD Response

Dow Corning submitted an application on March 29, 2011 to remove the synthetic minor HAP limits. This application was denied for lack of information on October 18, 2011. Based on discussions with AQD, Dow Corning may submit another application to remove the synthetic minor limits, but at this time the synthetic minor HAP limits are still in effect.

As stated in the response to comment #1, AQD considers the HAPs limits to be inclusive of emissions from both the proposed Midland Power Station and the existing Dow Corning Midland Plant and will enforce the combined HAPs limits. The limits in Permit to Install No. 24-11B are less than 9.9 tpy for each individual HAP and less than 24.9 tpy for aggregate HAPs. The permit states that these limits apply source-wide, meaning inclusive of the Dow Corning Midland Plant and the Midland Power Station, both of which are identified as SRN A4043.

The Dow Corning Midland Plant is presently a legally enforceable opt-out source by permit, meaning that the permits for the facility include the restriction that the emissions of HAPs must be less than the major source threshold values of 10 tpy for each individual HAP and 25 tpy for aggregate HAPs.

Comment

We understand that the Midland Power Station project was recently sold. If MDEQ has made a single source determination for this project for PSD and MACT Part 63 purposes, please share that determination with EPA.

AQD Response

This concern is discussed on page 3 of the public notice document "Fact Sheet" as follows:

Based on the potential emissions, the proposed MPS facility is subject to PSD review for PM, PM10, PM2.5, and NOx. Review under the PSD regulations requires Best Available Control Technology (BACT), a source impact analysis, an air quality impact analysis, and an additional impact analysis for each regulated air pollutant for which the proposed project would result in a significant net increase in emissions. The PSD major source threshold is 100 tpy for each of the criteria pollutants because, for the purpose of the PSD review, the proposed MPS facility is part of the Dow Corning Corporation Midland Plant, a chemical plant (one of 28 source categories listed in the PSD regulations) which is an existing major source of emissions. Once a source is major for a single criteria pollutant, a modification to the source is major for other criteria pollutants and subject to PSD review at the emission rate defined to be a significant net emissions increase.

If MPS had been evaluated as a separate source (not as a single source with the Dow Corning Corporation Midland Plant) the PSD major source threshold would have been 250 tons for each of the criteria pollutants because a biomass gasification combined heat and power facility is not one of the 28 listed source categories. Since the potential emissions of each of the criteria pollutants is less than 250 tons per year, the project permitted under Permit to Install No. 24-11B would not have been subject to PSD review including the BACT analysis and public participation process. The MPS project was clearly evaluated as a single source with the Dow Corning Midland Plant.

Emissions estimates and dispersion modeling were completed on the basis that the Dow Corning Midland Plant and MPS are a single source of emissions. Due to the location of the property to be leased by MPS from Dow Corning Corporation, for the purposes of the modeling analysis ambient air impacts were modeled at the MPS site boundary. Michigan assigns a State Registration Number (SRN) to each facility, and both the Dow Corning Midland plant and MPS are registered as SRN A4043. The results of the dispersion modeling analysis are presented in the Public Notice Fact Sheet, page 6. A more complete version of the data summarized in the Fact Sheet is available upon request. Please contact David Riddle of the MDEQ AQD Permit Section at 517-373-7081 to request a copy of the modeling analysis.