

STATE OF MICHIGAN

Rick Snyder, Governor



DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

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PUBLIC PARTICIPATION DOCUMENTS

For

DTE Electric Company
Detroit, Michigan

PERMIT APPLICATION NUMBERS

125-11B and 40-08G

February 4, 2015

FACT SHEET

February 4, 2015

Purpose and Summary

The Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), is proposing to act on Permit to Install (PTI) application numbers 125-11B and 40-08G for DTE Electric Company (DTE). DTE is proposing new sulfur dioxide (SO₂) limits in support of the 1-hour SO₂ National Ambient Air Quality Standard (NAAQS) for both the Trenton Channel Power Plant and the River Rouge Power Plant. Prior to acting on these applications, the AQD is holding a public comment period and a public hearing, to allow all interested parties the opportunity to comment on the proposed PTI applications. All relevant information received during the comment period and hearing, will be considered by the decision maker prior to taking final action on the applications.

Facility Background Information

The Trenton Channel Power Plant is located at 4695 West Jefferson Avenue, City of Trenton, Wayne County, and operates under Renewable Operating Permit (ROP) No. 199600204 and PTI No. 125-11A. The facility consists of five boilers, tangentially fired, fueled by pulverized coal, oil, and recovered paint solids. Boilers 16, 17, 18, and 19 have a combined heat input capacity of 3,023 million British thermal units (Btu) per hour. These four boilers are on a common steam header feeding two General Electric turbine generators rated at a combined output of 210 megawatts (MW). Boiler 9A has a rated heat input capacity of 5,836 million Btu per hour, which serves an electric generator with a nameplate capacity of 520 MW. All five boilers are equipped with electrostatic precipitators to control particulate matter emissions.

The River Rouge Power Plant is located at 1 Belanger Park, City of River Rouge, Wayne County, and operates under ROP No. MI-ROP-B2810-2012 and PTI No. 40-08E. The facility consists of two boilers fueled by pulverized coal, natural gas, blast furnace gas, coke oven gas, and recovered paint solids. The boilers have a combined heat input capacity of 4,950 million Btu per hour and each serve a turbine generator with a combined output of approximately 540 MW. Both boilers are equipped with electrostatic precipitators to control particulate emissions.

Present Air Quality

The United States Environmental Protection Agency (USEPA) has established the NAAQS for several pollutants, including SO₂. These standards are designed to protect the public health, including the most susceptible individuals such as children, the elderly, and those with respiratory ailments. The USEPA is required to review their standards every five years. Whenever a new standard is set, states must collect ambient air monitoring data to identify which areas are not meeting the new standard. The USEPA then reviews the state's information and determines which areas are considered to be in nonattainment of the standard.

In 2010, the USEPA revised the former 24-hour SO₂ standard to a new 1-hour standard of 75 parts per billion (ppb), averaged over three years. The new 1-hour standard for SO₂ is more restrictive than the former 24-hour standard.

In 2013, the USEPA designated a portion of Wayne County as being in nonattainment with the 1-hour SO₂ standard based upon registered exceedances at an air monitor operated by the MDEQ, located near Southwest High School (SWHS) in Detroit. Both DTE facilities are located in this nonattainment area.

In an effort to bring the nonattainment area into compliance with the 1-hour standard, the MDEQ is following the process outlined in the Clean Air Act. This requires the MDEQ to submit to the USEPA a State Implementation Plan (SIP) within 18 months of the nonattainment designation. The SIP must include legally enforceable measures to enable the area to regain attainment of the 1-hour SO₂ standard within five years. The SIP will be submitted to the USEPA in April 2015, and will have a public comment period and public hearing prior to that submittal. In support of that plan, DTE has elected to establish lower, federally enforceable SO₂ emission limits and use a continuous emission monitoring system (CEMS) to monitor and record their SO₂ emissions.

Compliance with the 1-hour standard must occur at both the violating air monitor and elsewhere throughout the nonattainment area as determined by computer modeling of emissions from the large SO₂ emitting facilities in the area. Localized areas that model nonattainment of the standard are called hot spots. The reductions in allowable emissions proposed by DTE will eliminate both the Trenton Channel Power Plant and the River Rouge Power Plant individual hot spot impacts, and reduce the SO₂ impacts at the SWHS air monitor.

Over the last several years, the levels of SO₂ at the SWHS monitor have been decreasing. In fact, based on the 2012-2014 monitoring data that is currently under review, the monitor is now meeting the 75 ppb 1-hour SO₂ standard based. While the monitor data is an encouraging sign that SO₂ levels in the area are dropping, modeling continues to show that locations exist in the nonattainment area that do not yet meet the standard. The SIP requires that all locations in the nonattainment area meet the standard as demonstrated by existing monitors and by modeling. This means that the reductions being proposed in the two DTE permit applications continue to be necessary for purposes of the SO₂ SIP.

Key Permit Review Issues

The AQD staff evaluated the proposed projects to identify all state rules and federal regulations which are, or may be, applicable. The tables in Appendix 1 summarize these rules and regulations.

There will not be any physical changes, changes to the method of operation, or increase in emissions of any regulated pollutants. Therefore, the facilities did not undergo New Source Review or review of State Rules 224, 225, and 702.

- **Criteria Pollutants Modeling Analysis** - Computer dispersion modeling was performed for the two DTE facilities, and other large sources in the nonattainment area.

Key Aspects of Draft Permit Conditions

- **SO₂ Emission Limits** – The draft permit includes additional SO₂ emission limits for the boilers at both the Trenton Channel Power Plant and the River Rouge Power Plant. The pound per hour limits are based on a 720-clock hour rolling average, as determined at the end of each calendar day. This means that the averaging is to be conducted over the previous 720 hours, whether the boiler is operating or not.
- **SO₂ Emissions Monitoring** – The draft permit includes the requirement that SO₂ emissions must be continuously monitored using CEMS.

Conclusion

The AQD staff has developed draft permit terms and conditions which would ensure that the proposed design and operation of the two facilities are enforceable and that sufficient monitoring, recordkeeping, and reporting would be performed by the applicant to determine compliance with these terms and conditions. If the permit applications are deemed approvable, the delegated decision maker may determine a need for additional or revised conditions to address issues raised during the public participation process.

If you would like additional information about this proposal, please contact Ms. Melissa Byrnes, AQD, at 517-284-6790.

Appendix 1
STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1201	Requires an Air Use Permit for new or modified equipment that emits, or could emit, an air pollutant or contaminant. However, there are other rules that allow smaller emission sources to be installed without a permit (see Rules 336.1279 through 336.1290 below). Rule 336.1201 also states that the Department can add conditions to a permit to assure the air laws are met.
R 336.1205	Outlines the permit conditions that are required by the federal Prevention of Significant Deterioration (PSD) Regulations and/or Section 112 of the Clean Air Act. Also, the same types of conditions are added to their permit when a plant is limiting their air emissions to legally avoid these federal requirements. (See the Federal Regulations table for more details on PSD.)
R 336.1224	New or modified equipment that emits toxic air contaminants must use the Best Available Control Technology for Toxics (T-BACT). The T-BACT review determines what control technology must be applied to the equipment. A T-BACT review considers energy needs, environmental and economic impacts, and other costs. T-BACT may include a change in the raw materials used, the design of the process, or add-on air pollution control equipment. This rule also includes a list of instances where other regulations apply and T-BACT is not required.
R 336.1225 to R 336.1232	The ambient air concentration of each toxic air contaminant emitted from the project must not exceed health-based screening levels. Initial Risk Screening Levels (IRSL) apply to cancer-causing effects of air contaminants and Initial Threshold Screening Levels (ITSL) apply to non-cancer effects of air contaminants. These screening levels, designed to protect public health and the environment, are developed by Air Quality Division toxicologists following methods in the rules and U.S. EPA risk assessment guidance.
R 336.1279 to R 336.1290	These rules list equipment to processes that have very low emissions and do not need to get an Air Use permit. However, these sources must meet all requirements identified in the specific rule and other rules that apply.
R 336.1299(2)(b)	Adopts by reference the provisions of 40 CFR 63.40 to 63.44 (2002) and 40 CFR 63.50 to 63.56 (2002), the federal hazardous air pollutant regulations governing constructed or reconstructed major sources.
R 336.1301	Limits how air emissions are allowed to look at the end of a stack. The color and intensity of the color of the emissions is called opacity.
R 336.1331	The particulate emission limits for certain sources are listed. These limits apply to both new and existing equipment.
R 336.1370	Material collected by air pollution control equipment, such as dust, must be disposed of in a manner, which does not cause more air emissions.
R 336.1401 and R 336.1402	Limit the sulfur dioxide emissions from power plants and other fuel burning equipment.
R 336.1601 to R 336.1651	Volatile organic compounds (VOCs) are a group of chemicals found in such things as paint solvents, degreasing materials, and gasoline. VOCs contribute to the formation of smog. The rules set VOC limits or work practice standards for existing equipment. The limits are based upon Reasonably Available Control Technology (RACT). RACT is required for all equipment listed in Rules 336.1601 through 336.1651.
R 336.1702	New equipment that emits VOCs is required to install the Best Available Control Technology (BACT). The technology is reviewed on a case-by-case basis. The VOC limits and/or work practice standards set for a particular piece of new equipment cannot be less restrictive than the Reasonably Available Control Technology limits for existing equipment outlined in Rules 336.1601 through 336.1651.
R 336.1801	Nitrogen oxide emission limits for larger boilers and stationary internal combustion engines are listed.
R 336.1901	Prohibits the emission of an air contaminant in quantities that cause injurious effects to human health and welfare, or prevent the comfortable enjoyment of life and property. As an example, a violation may be cited if excessive amounts of odor emissions were found to be preventing residents from enjoying outdoor activities.

STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.
R 336.1911	When requested by the Department, a facility must develop and submit a malfunction abatement plan (MAP). This plan is to prevent, detect, and correct malfunctions and equipment failures.
R 336.1912	A facility is required to notify the Department if a condition arises which causes emissions that exceed the allowable emission rate in a rule and/or permit.
R 336.2001 to R 336.2060	Allow the Department to request that a facility test its emissions and to approve the protocol used for these tests.
R 336.2501 to R 336.2514	Regulates mercury emissions from any stationary coal-fired electric generating unit (EGU) serving a generator with a nameplate capacity of more than 25 megawatts producing electricity for sale. The program begins January 1, 2015 and contains provisions for existing and new EGUs. Mercury program eligibility provisions and prohibitions, demonstration plans, testing, monitoring, record keeping, and reporting are all part of the rule.
R 336.2801 to R 336.2804 Prevention of Significant Deterioration (PSD) Regulations Best Available Control Technology (BACT)	<p>The PSD rules allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the National Ambient Air Quality Standards (NAAQS). The regulations define what is considered a large or significant source, or modification.</p> <p>In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing the BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities.</p> <p>In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.</p>
R 336.2901 to R 336.2903 and R 336.2908	<p>Applies to new "major stationary sources" and "major modifications" as defined in R 336.2901. These rules contain the permitting requirements for sources located in nonattainment areas that have the potential to emit large amounts of air pollutants. To help the area meet the NAAQS, the applicant must install equipment that achieves the Lowest Achievable Emission Rate (LAER). LAER is the lowest emission rate required by a federal rule, state rule, or by a previously issued construction permit. The applicant must also provide emission offsets, which means the applicant must remove more pollutants from the air than the proposed equipment will emit. This can be done by reducing emissions at other existing facilities.</p> <p>As part of its evaluation, the AQD verifies that no other similar equipment throughout the nation is required to meet a lower emission rate and verifies that proposed emission offsets are permanent and enforceable.</p>

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
Section 109 of the Clean Air Act – National Ambient Air Quality Standards (NAAQS)	The United States Environmental Protection Agency has set maximum permissible levels for seven pollutants. These NAAQS are designed to protect the public health of everyone, including the most susceptible individuals, children, the elderly, and those with chronic respiratory ailments. The seven pollutants, called the criteria pollutants, are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), and sulfur dioxide. Portions of Michigan are currently non-attainment for either ozone or PM2.5. Further, in Michigan, State Rules 336.1225 to 336.1232 are used to ensure the public health is protected from other compounds.

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
40 CFR 51 Appendix S Emission Offset Interpretive Ruling	Appendix S applies during the interim period between nonattainment designation and EPA approval of a SIP that satisfies nonattainment requirements specified in Part D of the Clean Air Act. Appendix S would apply in nonattainment areas where either no nonattainment permit rules apply or where the existing state rules are less stringent than Appendix S.
40 CFR 52.21 – Prevention of Significant Deterioration (PSD) Regulations Best Available Control Technology (BACT)	<p>The PSD regulations allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the NAAQS. The regulations define what is considered a large or significant source, or modification.</p> <p>In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities.</p> <p>In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.</p>
40 CFR 60 – New Source Performance Standards (NSPS)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. These New Source Performance Standards (NSPS) apply to new or modified equipment in a particular industrial category. These NSPS set emission limits or work practice standards for over 60 categories of sources.
40 CFR 63— National Emissions Standards for Hazardous Air Pollutants (NESHAP)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) (a.k.a. Maximum Achievable Control Technology (MACT) standards) apply to new or modified equipment in a particular industrial category. These NESHAPs set emission limits or work practice standards for over 100 categories of sources.
Section 112 of the Clean Air Act Maximum Achievable Control Technology (MACT) Section 112g	<p>In the Clean Air Act, Congress listed 189 compounds as Hazardous Air Pollutants (HAPS). For facilities which emit, or could emit, HAPS above a certain level, one of the following two requirements must be met:</p> <ol style="list-style-type: none"> 1) The United States Environmental Protection Agency has established standards for specific types of sources. These Maximum Achievable Control Technology (MACT) standards are based upon the best-demonstrated control technology or practices found in similar sources. 2) For sources where a MACT standard has not been established, the level of control technology required is determined on a case-by-case basis.

Notes: An "Air Use Permit," sometimes called a "Permit to Install," provides permission to emit air contaminants up to certain specified levels. These levels are set by state and federal law, and are set to protect health and welfare. By staying within the levels set by the permit, a facility is operating lawfully, and public health and air quality are protected.

The Air Quality Division does not have the authority to regulate noise, local zoning, property values, off-site truck traffic, or lighting.

These tables list the most frequently applied state and federal regulations. Not all regulations listed may be applicable in each case. Please refer to the draft permit conditions provided to determine which regulations apply.