

State Registration Number

B7221

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number

MI-ROP-B7221-2020

DTE Gas Company – Milford Compressor Station

State Registration Number (SRN): B7221

Located at

3515 Childs lake Road, Milford, Oakland County, Michigan 48381

Permit Number: MI-ROP-B7221-2020

Staff Report Date: September 28, 2020

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

TABLE OF CONTENTS

| | |
|---|----------|
| SEPTEMBER 28, 2020 - STAFF REPORT | 3 |
| NOVEMBER 5, 2020 - STAFF REPORT ADDENDUM | 8 |

State Registration Number

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RENEWABLE OPERATING PERMIT

SEPTEMBER 28, 2020 - STAFF REPORT

ROP Number

MI-ROP-B7221-2020

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan’s Administrative Rules for Air Pollution Control promulgated under Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source’s applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

| | |
|---|--|
| Stationary Source Mailing Address: | DTE Gas Company - Milford Compressor Station 3515 Childs Lake Road Milford, Michigan 48381 |
| Source Registration Number (SRN): | B7221 |
| North American Industry Classification System (NAICS) Code: | 486210 |
| Number of Stationary Source Sections: | 1 |
| Is Application for a Renewal or Initial Issuance? | Renewal |
| Application Number: | 201900184 |
| Responsible Official: | Chris Conley, Manager-Transmission and Storage Operations 248-529-0270 |
| AQD Contact: | Shamim Ahammod, Environmental Engineer 5862120508 |
| Date Application Received: | 11-06-2019 |
| Date Application Was Administratively Complete: | 11-20-2019 |
| Is Application Shield in Effect? | Yes |
| Date Public Comment Begins: | September 28, 2020 |
| Deadline for Public Comment: | October 28, 2020 |

Source Description

DTE Gas Company - Milford Compressor Station is located at 3515 Childs Lake Road in Milford, Michigan. The facility is about two miles north of I-96 and less than two miles west of Wixom Road. The 53-acre site is zoned as General Industrial while the neighboring properties are zoned mostly as rural residential.

In 1980, four 4,375 horsepower (HP) DeLaval, Model HVA12C4, V-12, natural gas-fired compressor engines were installed at the facility. These compressor engines are used to increase the pressure of natural gas being transported from natural gas transmission lines to natural gas storage fields in southern Michigan. When gas pressure increases, the temperature of the gas also increases. There are no gas storage fields at the facility and the facility does not conduct any gas storage operations.

In addition to the four DeLaval, natural gas-fired compressor engines, the facility has the following equipment: cold cleaners (FGCOLDCLEANERS); a Waukesha Model VHP5108G natural gas-fired emergency generator used to provide electricity to the compressor building in the event of a power outage (EUWAUKESHA); an 81 HP natural gas-fired emergency generator used to provide electricity to the office building and garage in the event of a power outage (EUOFFICEGENSET), and a 2.1 MMBtu/hour natural gas-fired boiler used to heat the compressor and auxiliary buildings (EUCOMPBLDGBLR). Process equipment identified in the ROP application as being exempt from Permit-To-Install requirements include the following: two natural gas-fired forced-air furnaces in the office building; a 155,000 Btu/hour natural gas-fired water heater in the compressor building; two 50,000 Btu/hour natural gas-fired forced-air space heaters in the compressor building; a 32,000 Btu/hour natural gas-fired space heater in the garage; an 80,000 Btu/hour natural gas-fired water heater located in the garage; a 290,000 Btu/hour Kerosene powered pressure washer used in the winter to wash vehicles; and a 7,500-gallon natural gas condensate storage tank.

In 2018, three 10,504 HP natural gas-fired combustion turbines were installed at the facility. These combustion turbines are used to compress natural gas and increase line pressure. In addition to the three-natural gas-fired combustion turbines, the facility has installed the following equipment: four 3 MMBTU/hr rated natural gas-fired auxiliary boilers for heating the buildings (EUAUXBOIL2A, 2B, 3A and 3B) and two 1 MMBTU/hr rated natural gas-fired auxiliary boilers for heating the fuel (EUAUXBOIL2C & 3C); four 0.1 MMBTU/hr rated natural gas-fired auxiliary heaters (FGAUXHEATING) for comfort heating; one 0.125 MMBTU/hr rated, natural gas-fired water heater for water heating and one 0.2075 MMBTU/hr rated natural gas-fired furnace for comfort heating

In 2017, a 1,300 electrical kilowatts (ekW) natural gas-fired emergency engine (EUNEMGEN) was installed at this facility. This engine is used to provide electrical power to the station and support equipment in the event of a power outage.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2019**.

TOTAL STATIONARY SOURCE EMISSIONS

| Pollutant | Tons per Year |
|--|----------------------|
| Carbon Monoxide (CO) | 14.51 |
| Lead (Pb) | 0 |
| Nitrogen Oxides (NO _x) | 106.45 |
| Particulate Matter (PM) | 3.14 |
| Sulfur Dioxide (SO ₂) | 0.30 |
| Volatile Organic Compounds (VOCs) | 0.20 |
| Individual Hazardous Air Pollutants (HAPs) ** | |
| Total Hazardous Air Pollutants (HAPs) | NA |

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

In addition to the pollutants listed above that have been reported in MAERS, the potential to emit of Greenhouse Gases (GHG) in tons per year of CO₂e (carbon dioxide equivalents) is less than 100,000. CO₂e is a calculation of the combined global warming potentials of six GHG (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is in Oakland County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment for all criteria pollutants except ozone(O₃).

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of carbon monoxide and nitrogen oxides exceeds 100 tons per year and the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, is equal to or more than 10 tons per year and/or the potential to emit of all HAPs combined is equal to or more than 25 tons per year.

The four DeLaval engines (EU006, EU007, EU008, and EU009) are identical 4,375 horsepower, natural gas-fired DELAVALS engines installed in 1980. The DELAVALS engines are exempt from the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines promulgated in 40 CFR 63, Subparts A and ZZZZ since they are existing 4SLB spark ignition engines with a horsepower of greater than 500 at a major source of Hazardous Air Pollutant emissions. This exemption is defined in 40 CFR 63.6590(b)(3)(ii).

The four DeLaval engines (EU006, EU007, EU008 and EU009) at the stationary source were subject to review under the Prevention of Significant Deterioration regulations of 40 CFR 52.21, for a Best Available Control Technology (BACT) analysis because at the time of New Source Review permitting the potential to emit of carbon monoxide and nitrogen dioxides was greater than 250 tons per year.

The facility has an existing Federal PSD permit (EPA-5-A-79-32) which was issued on September 28, 1979. To meet PSD, a Best Available Control Technology (BACT) analysis was required for nitrogen oxides (NO_x) and carbon monoxide (CO) emissions. Since no control equipment existed at that time for natural gas-fired reciprocating internal combustion engines, the BACT determination was based on a review of alternative engines. The result was the use of the DeLaval engines along with the emission limits for NO_x and CO as required in the federal PSD permit EPA-5-A-79-32. At the time the PSD permit was issued, the area where the facility was located was designated as nonattainment for ozone. The EPA Emission Offset Interpretative Ruling dated January 16, 1979, allowed for an exemption to the provisions of the offset ruling if the allowable nonmethane hydrocarbon emissions did not exceed 50 tons per year. Therefore, PSD permit EPA-5-A-79-32 was issued with 49 tons per year maximum allowable emission limit on nonmethane hydrocarbons to keep the facility from being subject to the offset ruling.

EUOFFICEGENSET and EUNEMGEN at the stationary source are subject to the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and JJJJ. EUOFFICEGENSET is an 81 HP natural gas-fired emergency generator was installed on June 1, 2013 and is used to supply electricity to the office trailers and garage during power outage. EUNEMGEN is an 1,818 hp natural gas-fueled emergency genset engine equipped with low NO_x technology (turbo charger and after cooler) that was manufactured in 2011 or later and installed on December 1, 2017 to provide electrical power to the site when the normal source of electrical power is disrupted. Although EUOFFICEGENSET and EUNEMGEN are also subject to 40 CFR 63 Subpart ZZZZ,

per 40 CFR 63.6590(c)(6), EUOFFICEGENSET will meet those requirements by meeting the requirements of 40 CFR 63 Subpart JJJJ. Per 40 CFR 63.6590(b)(1), since EUNEMGEN is an emergency engine and only provides power for the site's backup, electrical needs (i.e. does not provide power for NERC emergency demand response or voltage support on an electrical grid as described in 40 CFR 63.6640(f)(2)(ii) & (iii)), the requirements for EUNEMGEN under 40 CFR 63 Subpart ZZZZ are limited to the initial notification requirement.

Seven heating boilers with heat input capacities less than or equal to 5 MMBtu/hr are located at the stationary source and are subject to the National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and DDDDD. EUCOMPBLDGBLR, installed in 1980, is a 2.51 MMBtu/hour natural gas fired boiler used to provide space heat to the compressor and auxiliary buildings and is classified as an existing unit under Subpart DDDDD. EUAUXBOIL2A, 3A, 2B, & 3B, 2C are 3 MMBtu/hr natural gas-fired boilers (equipped with ultra-low NOx burners), installed in 2018, that are used to provide space heating to various buildings and are classified as new units subject to Subpart DDDDD. EUAUXBOIL2C & 3C are 1 MMBtu/hr boilers (equipped with ultra-low NOx burners), installed in 2018, that are used to heat fuel gas and are classified as new units subject to Subpart DDDDD. All seven boilers have reoccurring five-year (61 months) tune up requirements under that subpart.

EUWAUKESHA is an existing 750 horsepower four-stroke lean-burn (4SLB) natural gas fired engine installed in 1980. EUWAUKESHA is exempt from 40 CFR 63, Subparts A and ZZZZ per 40 CFR 63.6590(b)(3)(ii).

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

No emission units have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because all emission units at the stationary source either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

Source-Wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-Wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-B7221-2015 are identified in Appendix 6 of the ROP.

| PTI Number | | | |
|------------|--|--|--|
| 149-80 | | | |

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

Non-applicable Requirements

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

| PTI Exempt Emission Unit ID | Description of PTI Exempt Emission Unit | Rule 212(4) Citation | PTI Exemption Rule Citation |
|------------------------------------|--|-----------------------------|------------------------------------|
| EUOFFICEHEAT | Two 65,000 Btu/hour natural gas fired forced air furnaces located in the office building. | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUCOMPBLDGH2OHTR | 155,000 Btu/hour natural gas fired water heater located in the compressor building. | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUFORCEDAIRCOMP | Two 50,000 Btu/hour natural gas fired forced air space heaters in the compressor building. | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUGARAGESPACEHTR | 32,000 Btu/hour natural gas fired space heater located in the garage. | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUPRESSUREWASHER | 290,000 Btu/hour Kerosene fired pressure washer used to wash vehicles. | Rule 212(3)(b) | Rule 281(2)(b) |
| EUCONDENSATETANK | 7,500-gallon storage natural gas condensate storage tank. | Rule 212(4)(d) | Rule 284(2)(e) |
| EUGARAGEWATERHTR | Natural gas-fired water heater (80,000 BTU/hr) located in the Garage. | Rule 212(4)(c) | Rule 282(2)(b)(i) |

Draft ROP Terms/Conditions Not Agreed to by Applicant

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by EGLE, AQD

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Joyce Zhu, Warren District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

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RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-B7221-2020

NOVEMBER 5, 2020 - STAFF REPORT ADDENDUM

Purpose

A Staff Report dated September 28, 2020, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

| | |
|-----------------------|---|
| Responsible Official: | Chris Conley, Manager-Transmission and Storage Operations 248-529-0270 |
| AQD Contact: | Shamim Ahammod, Environmental Engineer 5862120508 |

Summary of Pertinent Comments

No pertinent comments were received during the 30-day public comment period.

Changes to the September 28, 2020 Draft ROP

No changes were made to the draft ROP.