N1099
MANUAL

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N109967967

FACILITY: Consumers Energy - Northville Compressor Station		**SRN / ID:** N1099
LOCATION: 9440 NAPIER RD, NORTHVILLE		**DISTRICT:** Detroit
CITY: NORTHVILLE		**COUNTY:** WAYNE
CONTACT: Amy Kapuga , Environmental Engineer		**ACTIVITY DATE:** 06/30/2023
STAFF: Stephen Weis	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Compliance inspection of the Consumers Energy Northville Compressor Station facility in Northville Township. The Consumers facility is scheduled for inspection in FY 2023.		
RESOLVED COMPLAINTS:		

Location:
Consumers Energy (SRN N1099)
Northville Compressor Station
9440 Napier Road
Northville Township

Date of Activity:
Friday, June 30, 2023

Personnel Present:
Steve Weis, EGLE-AQD Detroit Office
Frank Rand, Field Environmental Coordinator, Consumers Energy
Amy Kapuga, Senior Environmental Engineer, Environmental Services, Consumers Energy
Joy Hwang, Environmental Quality & Sustainability, Consumers Energy
Andria Mitchell, Station Supervisor, Consumers Energy Northville Station

Purpose of Activity
A self-initiated inspection of the Consumers Energy Northville Compressor Station facility (hereinafter "Northville Station" or "Consumers") was conducted on Friday, June 30, 2023. The Northville Station was on my list of sources targeted for an inspection during FY 2023. The purpose of this inspection was to determine compliance of operations at the Northville Station with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control) and Federal standards. The facility is also subject to the terms and conditions of Renewable Operating Permit No. MI-ROP-B1099-2023.

Facility Site Description
The Northville Station facility is located on approximately 28 acres on the east side of Napier Road about halfway between 7 Mile and 8 Mile Roads in Northville Township. Napier Road marks the border between Wayne and Washtenaw Counties, with areas to the east of Napier in Wayne County. The area around the facility is primarily a residential area populated with larger, more rural lots. The closest residences are located directly across the street from the Northville Station, and directly to the south, sharing a fence line with the facility; the closest residence is located approximately 350 yards from the primary air emissions sources at the facility. Maybury State Park is located directly to the east and north of the Northville Station, and it shares a fence line with the facility.

The Northville Station is a compressor station, its operations serving to assure that there is adequate pressure in the natural gas storage fields and the natural gas supply lines owned and

operated by Consumers Energy and MichCon. There are three different natural gas storage fields that are located 1-2 miles to the west and northwest of the Northville Station in Washtenaw and Oakland Counties. I was told during a past site visit that the three storage fields are identified as the Reef, which is in Salem Township in Washtenaw County, and Lyon 29 and Lyon 34 which are located in Lyon Township in Oakland County. As natural gas is needed for distribution, a valve is opened to allow pressurized gas to flow from the storage fields to the natural gas distribution pipes as the pressure in the storage field is greater than the pressure in the pipes. The Northville Station utilizes compressors that raise the pressure of the natural gas being stored in the nearby storage fields. The compressors are driven by four natural gas-fired engines, and the compressors and engines are located in a building in the northeast part of the property. There are also an office building and some buildings used for maintenance activities and storage located in the eastern part of the property, and some above-ground storage tanks located to the west of the engine building that are used to store natural gas condensate. There are also some city gate structures at the facility. City gates are used to reduce the pressure of the natural gas prior to it entering the distribution lines, and they are also the point in the process at which the odorant (methyl mercaptan) is added to the natural gas.

Facility Operations

The Northville Station is part of Consumers Energy's natural gas distribution system in their Michigan service area. A map from Consumer's website is attached that shows the utility's service area, and the location of Consumers facilities and infrastructure, including the Northville Station. The gas distribution system consists of gas storage fields, compressor stations and gas transmission pipelines, as well as associated infrastructure, such as city gates. Natural gas is transported to Michigan via underground pipelines, and it is routed either directly into the supply lines or into storage fields. According to Consumers Energy's website, the Michigan service area has one of the largest underground storage systems in the country, consisting of 15 underground gas storage fields with a storage capacity of 151 billion cubic feet. The storage fields are natural porous rock formations.

As mentioned in the last section, the Northville Station is a compressor station that serves to ensure that there is adequate pressure in the natural gas distribution system by pressurizing the natural gas in the gas storage fields in the area. Natural gas enters the Northville Station via a series of supply lines. The gas that is transported directly into the distribution lines enters the facility at about 550-650 psi pressure, and the pressure is raised to 750-800 psi prior to distribution. This gas is of pipeline quality, and it comes from other Consumers Energy stations (St. Clair) and MichCon.

The natural gas that is sent to the storage fields is scrubbed to knock out moisture, and then compressed/pressurized to approximately 2,000 psi. The moisture that is collected is pumped to the natural gas condensate tanks. All of the gas that is compressed by the engines is sent through coolers that cool the gas using radiant heat. The gas is cooled to meet pipeline temperature requirements.

As mentioned in the last section of this report, at the Northville Station facility, natural gas is delivered to the distribution lines by opening a valve that allows the pressurized gas to flow from the storage fields to the natural gas distribution pipes as the pressure in the storage field is greater than the pressure in the pipes. The Northville Station is unique among the other natural gas

storage fields in Michigan in that the natural gas flows directly from the storage fields to the distribution pipeline without the use of an engine to boost the flow. As the natural gas in the storage field is pipeline quality, and moisture has been removed prior to it being stored, the Northville Station does not need to utilize a glycol dehydrator to remove moisture from the natural gas.

The Northville Station operates Monday through Friday, from 7:00am until 3:00pm. The facility occasionally operates at additional times, as necessary, to address gas supply needs.
The Northville Station's Renewable Operating Permit defines Emission Units and Flexible Groups that represent the various processes that occur at the facility. These Emission Units and Flexible Groups are described below.

- EUENGINE 1-1, EUENGINE 1-2, EUENGINE 1-3 and EUENGINE 1-4 – all four engines represented by these Emission Units are 19 MMBTU/hour, 2,700 hp rated natural gas-fired reciprocating engine that are used to power the compressors at the facility. The compressors are used to compress natural gas for injections into the natural gas storage fields.The engines are Clark Model TLA-8 engines. The permitting and regulatory requirements for the four engines are put forth in the FGENGINES Flexible Group.
- FGCOLDCLEANERS – this Flexible Group contains the general EUCOLDCLEANERS Emission Unit that applies to any cold cleaning equipment that is exempt from DEQ-AQD permitting requirements and was placed into operation after July 1, 1979. In addition, this Flexible Group addresses two specific cold cleaners – EUDEGREASER1, which is identified as a small cold cleaner located in the fabrication building/mechanic shops, and EUDEGREASER2, which is identified as a small cold cleaner used for parts cleaning that is located in the garage.
- FGPROCESSHTRS – this Flexible Group addresses two natural gas-fired heaters. EUFUELHEATER1 is a fuel gas heater rated at 250,000 BTU/hour, and EULINEHEATER3 is a pipeline heater for the Salem City Gate rated at 1.5 MMBTU/hour.
- FGRULE285(2)(MM)– this Flexible Group addresses routine and emergency venting of natural gas from transmissions and distribution systems of field gas from gathering lines which meet the permit exemption requirements put forth in Michigan Administrative Rule 285(2)(mm).
- EUEMERGGEN – a Caterpillar natural gas-fired engine rated at 6.3 MMBTU/hour.

There is also additional equipment and processes located at the facility that are exempt from EGLE-AQD permitting requirements. The table from the current ROP's staff report that summarizes the exempt equipment that is not included in the ROP is attached for reference.

Inspection Narrative

I arrived at the facility at 10am. After signing in at the facility's office building, I went to the conference room where I was met by Amy, Frank, Joy and Andria.

We discussed the requirements of the facility's ROP. The ROP was issued with an effective date of May 23, 2023. We discussed the requirements in the Emission Unit and Flexible Group tables in the ROP, and how Consumers demonstrates compliance with the ROP. During the discussion, I was provided with copies of the information and records that are maintained by Consumers as part compliance demonstration. The details of the review of the facility's compliance with the terms and conditions of the ROP are discussed in the next section of this report.

We did not walk around the facility during this site visit. None of the equipment has changed since my last site visit, and I planned to be on site later in the year for a scheduled compliance emissions test for the emergency engine (EUEMERGGEN).
I left the facility at 11:30am.

Permits/Orders/Regulations

Permits

Renewable Operating Permit
Renewable Operating Permit No. **MI-ROP-N1099-2023** was issued to Consumers Energy with an effective date of May 23, 2023. This permit addresses the Emission Units and Flexible Groups referenced in the "Facility Operations" section of this report.

The following paragraphs provide a description of the Northville Station's compliance with the terms and conditions put forth by ROP No. MI-ROP-N1099-2023, with the headings representing the sections of the ROP.

Source-Wide Conditions

There are no Source-Wide Conditions applicable to the facility in ROP No. MI-ROP-N1099-2023.

EUEMERGGEN

This Emission Unit addresses the requirements for a 6.3 MMBTU/hour (natural gas-fired emergency engine. The generator is exempt from the requirement to obtain a Permit to Install pursuant to Michigan Administrative Rule 201 per the exemption provisions put forth in Michigan Administrative Rule 285(2)(g). The engine is subject to the requirements of 40 CFR Part 60 Subpart JJJJ and 40 CFR Part 63 Subpart ZZZZ.

I. Emission Limits
SCs I.1-3 are the emission limits for NOx, CO and VOC from Subpart JJJJ. The engine is not a certified engine, so compliance emissions testing is performed to demonstrate compliance with these requirements, as well as keeping records of maintenance activities, as required by SC VI.2.

The initial testing of the engine was performed in October 2020. The most recent compliance emissions test was performed on October 10, 2023. The results indicated compliance with the emission limits. The test report for the October 10, 2023 test has been evaluated and is in the facility file.

II. Material Limits
SC II.1 requires that the engine can burn only pipeline quality natural gas, as defined in 40 CFR 60.4248. As part of the compliance emissions test protocol for the October 2020 test, the sulfur content of the natural gas was presented at 20 grains per 100 scf, and heating value was between 950 and 1100 BTU. The information was presented by the pipeline natural gas tariff sheets supplied to Consumers compressor stations. The facility is in compliance with this requirement.

III. Process/Operational Restrictions
SC III.1 and 2 – the engines are limited to no more than 100 hours of operation per calendar year for necessary maintenance checks and readiness testing (SC III.1), and up to 50 hours per calendar year for non-emergency situations. I was shown and provided with copies of examples of the

Emergency Generator Log Sheet, and the Generator Maintenance, Operations and Record Keeping Requirements form. The latter form includes rows to track the annual hours of operation for maintenance/readiness testing, and annual hours of operation for other non-emergency operation. The facility is in compliance with these requirements.

SC III.3 requires that the engine shall be operated and maintained such that it meets the emission limits put forth in SCs I.1-3. Consumers follows a Preventative Maintenance and Operations Plan for the engine, a copy of which is attached to this report. Compliance.
SC III.4 applies to certified engines. EUEMERGGEN is not a certified engine, so this condition does not apply.

SC III.5 requires that non-certified engines keep a maintenance plan for the engine, and maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. Consumers has a Preventative Maintenance and Operations Plan for the engine, a copy of which is attached to this report.

IV. Design/Equipment Parameters
SC IV.1 requires the engine to have a non-resettable hour meter. Consumers is in compliance with this requirement.

V. Testing/Sampling
SC VI.1 requires that for non-certified engines, an initial performance test be performed within designated timelines. This requirement was satisfied with the initial performance test on the engine that was performed in October 2020. SC V.1 further requires that the testing consist of three separate test runs of at least one hour, and that subsequent performance testing be completed every 8,760 hours of engine operation of every 3 years, whichever comes first. The October 10, 2023 testing meets the 3-year requirement.

VI. Monitoring/Recordkeeping
For SC VI.1, records of the testing required in SC V.1 is required for non-certified engines. This information is kept on file, and it is also submitted to EGLE-AQD.

For SC VI.2, records are required to be kept of a maintenance plan, and conducted maintenance activities. This information is maintained by Consumers. A copy of some example records are included with this report for reference.

For SC VI.3, records are kept of the hours of operation of the engine, and the hours are classified as to the reason for engine operation (emergency vs. non-emergency).

For SC VI.4, a record of the notifications submitted for the construction and start-up of the engine are maintained.

VII. Reporting
Consumers is **in compliance** with the conditions in this section. All of the required notifications and records are completed and submitted. For SC VII.5 and 6, Subpart JJJJ notification was submitted to AQD as correspondence from Consumers dated November 15, 2019. For SC VII.7, the initial Subpart ZZZZ notification was submitted as correspondence dated April 8, 2020.

VIII. Stack/Vent Restrictions

There are no stack/vent restrictions associated with the Flexible Group.

IX. Other Requirements
Based on information presented and discussed, EUEMERGGEN appears to be in substantial compliance with the requirements of 40 CFR Part 60 Subpart JJJJ (SC IX.1) and 40 CFR Part 63 Subpart ZZZZ (SC IX.2).

FGENGINES
This Flexible Group addresses the regulatory requirements for the four natural gas-fired engines that are used to compress natural gas for storage in the natural gas storage fields. These engines are identified as EUENGINE1-1, EUENGINE 1-2, EUENGINE1-3, and EUENGINE1-4.

There are not many permit conditions associated with FGENGINES; there are no emission limits, process/operational restrictions, design/ equipment parameters, or testing/sampling requirements.

II. Material Limits
Special Condition (SC) II.1 limits the compressor engines to fire only natural gas, which is the only fuel that is used in these engines.

VI. Monitoring/Recordkeeping
SC VI.1 requires Consumers to record the natural gas usage for FGENGINES for each calendar month, and SV VI.2 requires the records to be completed in an acceptable format. The Northville Station is **in compliance** with this requirement. I was provided with copies of the records that are maintained by facility staff to track the amount natural gas usage in the four engines for January through May of 2023, which is attached to this report for reference. I was told that in addition to this information, each month, a beginning and ending gas meter reading is taken, as well as a beginning and ending reading of the engine hours.

VII. Reporting
The Northville Station is **in compliance** with the reporting requirements in this section, submitting the required reports.

IX. Other Requirements
SC IX.1 – This SC requires that the four engines comply with all applicable provisions of 40 CFR Part 63 Subpart ZZZZ. The engines are not currently subject to 40 CFR Part 63, Subpart ZZZZ, as they are classified as existing spark-ignition two-stroke lean-burn engines. The engines may be subject to Subpart ZZZZ if they are reconstructed at any point in the future, and the condition includes language stating "...if the units become subject to the reconstruction or installation of new units", so this SC is presumably included as a place holder should the engines be changed in such a way to trigger the applicability requirements of Subpart ZZZZ.

FGRULE285(2)(mm)
This Flexible Group addresses routine and emergency venting of natural gas at the Northville Station.

Venting was formerly part of what was called a "fire gate event". The fire gate is a valve that is used during emergencies that closes valves on pipes that lead to the Northville Station. When this occurs, accumulated gas at the facility can be vented to the atmosphere. The fire gate was tested

annually via a fire gate event, at which time yearly maintenance activities were performed, including checking the emergency systems, and checking connections, valves and pilot lights. During this site visit, I was told that natural gas is no longer vented during fire gate events as part of Consumers Energy's methane reduction strategy, and that block gates were installed sometime in the last couple of years.

There was an emergency natural gas release on June 17, 2023 due to a power outage that was reported to EGLE-PEAS within 24 hours. During my last couple of site visits, I was told that the amount of natural gas that is vented depends on the pressure in the system at the facility. Consumers has created a calculation sheet for the Northville Station that estimates the amount of natural gas that will be vented under specific pressures in the system. If an amount greater than 1 MMCF of natural gas is vented, Consumers Energy notifies the appropriate entities, as they did for the June 17, 2023 emergency release.
The Northville Station is **in compliance** with the requirements in this Flexible Group.

FGCOLDCLEANERS
This Flexible Group contains the requirements for cold cleaners at the facility that meet identified criteria. The Special Conditions in the Flexible Group are part of a template that addresses the various state requirements that apply to cold cleaners, as found in Parts 6 and 7 of the Michigan Administrative Rules.

There are currently two cold cleaners on site; one is located in the mechanic's shop in the Auxiliary Building, and the other is located in the garage area of the Equipment, Maintenance and Storage Building. The units are ZEP Dynaflow II units, Model No. 906101. These cold cleaners are used for the general cleaning of parts that are used in maintenance activities. Information in onsite facility files that I reviewed during a facility site visit in 2015 indicated that the units were installed in September 1994. I was told that the cold cleaners are using the same material as in my past site visits, Dyna 143. During a site visit in 2015, I was provided with a Material Safety Data Sheet (MSDS) for Dyna 143, a copy of which is in the facility file. It shows that the material has a Reid Vapor Pressure of 0.067 kPa (0.5 mmHg), a specific gravity of 0.79, and that it is water insoluble.

During a past site visit, the inspection and maintenance procedures for the cold cleaners were explained to me. The procedures follow an internal air quality regulation related maintenance procedure through which, once a month, the maintenance procedures are performed, and the operating parameters are monitored in accordance with the company's procedures. This includes checking the drains and filters on the units. I was provided with copies of the "Parts Cleaner Insp" forms for January through May of 2023, which are attached to this report for reference. The forms are work order forms that summarize parts cleaner inspections that were performed at the facility.

The Northville Station is **in compliance** with the conditions in FGCOLDCLEANERS.

FGPROCESSHTRS
This Flexible Group addresses any natural gas industrial boilers and process heaters at the facility, which is classified as a major source of hazardous air pollutants, that are subject to requirements of 40 CFR Part 63 Subpart DDDDD (National Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers). EUFUELHEATER1 and EULINEHEATER3 are included in this Flexible Group. The special conditions in this Flexible Group address the requirements of Subpart

DDDDD. There are no emission or material limits, and no testing requirements; the special conditions address the maintenance and tune up, energy assessment and work practice standards associated with the Subpart.

Regarding the initial notification requirements for the regulation, per correspondence dated May 21, 2013, Consumers provided US EPA and DEQ (now EGLE)-AQD with the Initial Notification of Applicability for Subpart DDDDD for all of their facilities in Michigan having equipment that was determined to be subject to the regulation, including the Northville Station. This notification identified three natural gas fired pipeline heaters, EULINEHEATER1, EULINEHEATER2 and EULINEHEATER3, and the natural gas-fired fuel gas heater identified as EUFUELHEATER1, as being subject to Subpart DDDDD. In addition, in correspondence dated October 9, 2014, Consumers Energy notified US EPA and DEQ (EGLE)-AQD that the heater identified as EUFUELHEATER1, which was a 750,000 BTU/hour rated unit, was replaced by a 250,000 BTU/hour rated natural gas-fired boiler. The October 9 correspondence also included the Initial Applicability Notification, in accordance with 40 CFR 63.9.

As part of my last site visit in 2020, I was provided with a spreadsheet titled "Industrial Boiler MACT Applicability Northville Compressor Station" that lists all of the heaters and boilers at the facility, and provides information about each of them, including the rating (MMBTU/hour), installation date, whether the unit is subject to Subpart DDDD, and if so, presents information regarding the requirements associated with the Subpart and a schedule of compliance. A copy of the spreadsheet is attached to this report. The spreadsheet shows that the fuel gas heater identified as EUFUELHEATER1 and the Salem City Gate heater identified as EULINEHEATER3 are the only units at the Northville Station that are subject to the requirements of Subpart DDDDD, which is still the case.

Consumers submitted a Subpart DDDDD notification for EULINEHEATER3 via correspondence that was sent to EGLE-AQD dated October 27, 2020 notifying that the heater had an initial startup date of October 18, 2020. Both of the heaters in this Flexible Group are also exempt from Michigan Administrative Rule 201 permitting requirements (per the provisions in Michigan Administrative Rule 282(2)(b)(i)).

For SC III.1, EULINEHEATER3 is required to have an initial tune-up conducted no later than November 18, 2025, which is 61 months after the heater's startup date.

SC III.2 requires a 5-year tune-up be performed no more than 61 months after the previous tune-up. For EUFUELHEATER1, the last tune-up was performed on February 5, 2021. SC III.3 puts forth the specifics regarding the tune-ups that are to be performed, per the requirements in 40 CFR 63.7540(a)(10)(i) through (v). To my knowledge, the tune-up was performed on the required date, so the provisions of SC III.4 are not applicable. Per the requirements of SC III.5, I have been told that the heaters are operated in a manner consistent with safety and good air pollution control practices for minimizing emissions.

Consumers maintains records of the notifications and reports submitted to comply with Subpart DDDDD, as required in SCs VI.1 through 4.

The facility is in compliance with the reporting requirements in Section VII of the Flexible Group table. A Notice of Compliance Status report was submitted on March 12, 2021, and included notification of the February 2021 tune-up that was performed on EUFUELHEATER1.

Consumers Energy looks to be in substantial compliance with the requirements of 40 CFR Part 63 Subpart DDDDD at the Northville Station.

Federal Regulations

As discussed earlier in this report, the new emergency engine designated by the facility as EUEMERGEN is subject to requirements in 40 CFR Part 60 Subpart JJJJ, and the equipment in the FGPROCESSHTRS Flexible Group is subject to requirements of 40 CFR Part 63, Subpart DDDDD.

The Northville Station facility is not subject to **40 CFR Part 63, Subpart HHH (National Emission Standards for Hazardous Air Pollutants for Natural Gas Transmission and Storage Facilities)** as the facility does not operate any glycol dehydrators. This is due to the natural gas in the storage fields being of pipeline quality, with moisture having been removed prior to the gas being stored in the storage fields.

Compliance Determination

Based upon the results of the June 30, 2023 site visit and subsequent records review, the Consumers Energy Northville Compressor Station appears to be in compliance with the terms and conditions of the facility's Renewable Operating Permit, as well as applicable State and Federal regulations.

NAME Steve Wes DATE 9/12/24 SUPERVISOR JK