

N1099

MAWILS

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N109929099

FACILITY: Consumers Energy - Northville Compressor Station		SRN / ID: N1099
LOCATION: 9440 NAPIER RD, NORTHVILLE		DISTRICT: Detroit
CITY: NORTHVILLE		COUNTY: WAYNE
CONTACT: Kenneth Gray , Field Planner Scheduler/Field Leader		ACTIVITY DATE: 04/07/2015
STAFF: Stephen Weis	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Compliance inspection of the Consumers Energy Northville Compressor Station. This Consumers Energy facility is scheduled for inspection in FY 2015.		
RESOLVED COMPLAINTS:		

Location:

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

Date of Activity:

Tuesday, April 7, 2015

Personnel Present:

Steve Weis, DEQ-AQD Detroit Office
Ken Gray, Field Planner Scheduler/Field Leader - Northville/Freedom Compression Stations

Purpose of Activity

A self-initiated inspection of the Consumers Energy Northville Compressor Station facility (hereinafter "Northville Station") was conducted on Tuesday, April 7, 2015. The Northville Station was on my list of sources targeted for an inspection during FY 2015. 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-B1099-2011.

Facility Description

The Northville Station facility is located on approximately 28 acres on the east side of Napier Road about halfway between 7 and 8 Miles Roads in Northville Township. Napier Rd. marks the border between Wayne and Washtenaw Counties, with areas to the east being in Wayne County. The area around the facility is primarily a residential area with larger, 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 facility, and shares a fence line.

The Northville Station is part of Consumers Energy's natural gas distribution system in their Michigan service area. The gas distribution system consists of gas storage fields, compressor stations and gas transmission pipelines and associated infrastructure, such as city gates. Natural gas is transported to Michigan via underground pipelines, and it is directed either directly into the supply line or in storage fields. According to Consumers Energy's website, this system has one of the largest underground storage systems in the country, with a storage capacity of 143 billion cubic feet. The storage fields are natural porous rock formations that are located in depleted underground gas fields. The Northville Station is a compressor station, serving to assure that there is adequate pressure in the natural gas supply lines owned and operated by Consumers Energy and MichCon. The facility utilizes compressors that raise the pressure of the natural gas being stored in nearby

storage fields in Washtenaw and southwest Oakland Counties. As natural gas is needed, a valve is opened to allow 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 compressors are driven by four natural gas-fired engines; 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.

Facility Operations

The Northville Station operates Monday through Friday, from 6:30am until 4:30pm. The facility occasionally operates at additional times, as necessary, to address gas supply needs.

As mentioned in the last section, the Northville Station is part of Consumers Energy's natural gas distribution system. It is a compressor station that serves to assure 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 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 collected is pumped to the natural gas condensate tanks. All of gas that is compressed by the engines is sent through coolers that cool the gas using radiant heat. The gas is cooled in order to meet pipeline temperature requirements.

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 compressors. The compressors are used to compress natural gas for injections into or withdrawal from natural gas storage fields.

The engines are Clark Model TLA-8 engines.

- EUAUXGENERATOR - a natural gas-fired emergency generator with a maximum rated heat input capacity of 2.16 MMBTU/hour, and a rated output of 332 hp.
- 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, and EUDEGREASER1, which is identified as a small cold cleaner used for pars cleaning.
- FGENGINES– this Flexible Group summarizes the permitting and regulatory requirements for the four engines (1-1 through 1-4).
- FGRULE285(MM)– this Flexible Group addresses any Emission Unit that experiences routine and emergency venting of natural gas and meets the permit exemption requirements put forth in Michigan Administrative Rule 285(mm).

There is also additional equipment and processes located at the facility that are exempt from DEQ-AQD permitting requirements. I have attached the table from the ROP staff report that summarizes all of the exempt equipment that is not included in the ROP. During my inspection, I was told that three additional exempt above-ground storage tanks were installed in the Summer of 2014. These are double-walled tanks that are used to store new, used and reclaim oil.

Inspection Narrative

I arrived at the facility at about 1:40pm. I checked in at the main office at the Northville Station, and I was quickly met by Ken Gray, a Field Planner Scheduler/Field Leader with Consumers Energy.

Ken and I proceeded to his office. I communicated the purpose of the visit, specifying that I wanted to check how Consumers Energy tracks compliance of the Northville Station with the applicable regulations and permits. We went through the conditions of the ROP, and Ken would describe how the facility tracks compliance with the requirements of the conditions. Ken was able to present files, as needed, to demonstrate items such as engine run time, and the amount of natural gas used. During this portion of the inspection, Ken also described facility operations, and described the purpose of the facility in relation to the natural gas distribution system. He showed me a map of the system that showed the Northville Station's location between Consumer's St. Clair and Ray Stations to the east, and the Freedom Station to the southwest.

Ken and I then walked around the facility. We started by looking at the auxiliary engine. The unit is an Allis-Chalmers unit that was installed in 1959. There is a newer boiler in the Auxiliary building. Ken told me that in 2012, three new Lochinvar boilers were installed. Each unit has a maximum rated heat input capacity of 500,000 BTU/hour, and they are equipped with low NO_x technology. Aside from the boiler in the Auxiliary building, one of the remaining three boilers is located in the Engine building, and the other is located in the Parts Storage building. These boilers do not operate continuously; they are used on an as needed basis.

We walked through the Parts building, and into the maintenance area. I saw the cold cleaners, and they had signs posted that read "Lid Closed When Not In Use".

We then walked through the Engine building. Ken showed me the engines. I read the engine type and model number from the plates affixed to the engines. Ken described the process, explaining that the gas is cooled after being compressed by the engine-driven compressors. During the time of my visit, Engine 1-2 was the only engine operating. We walked outside and took a look at some of the above ground storage tanks. We then proceeded back to the office area to go over any final questions.

I left the facility at 3:35pm.

Permits/Orders/Regulations

Renewable Operating Permit

Renewable Operating Permit No. **MI-ROP-N1099-2011** was issued to Consumers Energy with an effective date of December 1, 2011. This permit addresses all of 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 the ROP, with the headings representing the sections of the ROP.

Source-Wide Conditions

The Source-Wide Conditions table in the ROP contains only one Special Condition, IX.1, which states that the permittee shall comply with all of the applicable provisions of **40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants), Subpart DDDDD (Industrial/Commercial/Institutional Boilers and Process Heaters)** by the initial compliance date.

When MI-ROP-N1099-2011 was drafted, Subpart DDDDD had become effective, with an effective date of May 18, 2011. However, due to implementation delays due to judicial review, and requests to EPA to reconsider the rule, there were no final rule language or applicability criteria available when the ROP was written and issued. To address this, a high-level citation in the form of Special Condition IX.1 was placed in the Source-Wide Conditions section that requires Consumers Energy to comply with any applicable of requirements of Subpart DDDDD.

Consumers Energy has addressed this requirement in the time since the ROP was issued. Per correspondence dated May 21, 2013, Consumers provided US EPA and DEQ-AQD with the Initial Notification of Applicability for Subpart DDDDD for all of their facilities in Michigan that were 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-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.

To this point, Consumers Energy is **in compliance** with these requirements. When the ROP is renewed, the equipment that is subject to 40 CFR Part 63, Subpart DDDDD will be evaluated for inclusion in the ROP.

EUAUXGENERATOR

This Emission Unit addresses the requirements for the 2.16 MMBTU/hour natural gas-fired emergency generator. The generator is subject to the requirements of **40 CFR Part 63 Subpart ZZZZ (National mission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)**. The paragraphs that follow provide a summary of the Northville Station's compliance with the Special Conditions in this Emission Unit.

III. Process/Operation Restrictions

III.1 – **Compliance**. The generator is equipped with a non-resettable hour meter.

III.2 – **Compliance**. Consumers keep track of the hours in accordance with the emergency usage criteria in Subpart ZZZZ, paragraph 6640(f)(1)(i-iii). Ken showed me the records that are kept, which showed that in 2014, the engine operated for 174.4 hours – 6.8 hours were for testing, and 167.6 hours were associated with power outages.

III.3 – **Compliance**. Consumers stated that they are observing best start up practices.

III.4 and III.5 – **Compliance**. Consumers stated that they are following recommended maintenance practices for the engine.

VI. Monitoring/Recordkeeping

VI.1 – Consumers is keeping records of engine maintenance. **Compliance**.

VI.2 – **Compliance**. Consumers is tracking the hours of operation of the engine.

VI.3 – **Compliance**. Consumers has records of the notifications and other required records associated with Subpart ZZZZ.

VII. Reporting

The Northville Station is **in compliance** with all reporting requirements associated with EUAUXGENERATOR.

IX. Other Requirements

The Northville Station is **in compliance** with the permit conditions in this section. The engine complies with the applicable provisions of Subpart ZZZZ.

FGENGINES

This Flexible Group addresses the regulatory requirements for the four natural gas-fired engines. There are not many permit conditions associated with FGENGINES; there are no emission limits, material limits, process/operational restrictions, design/ equipment parameters, or testing/sampling requirements.

Under "VI.Monitoring/Recordkeeping", Special Condition VI.1 requires Consumers to record the natural gas usage for FGENGINES for each calendar month. The Northville Station is **in compliance** with this requirement.

The Northville Station is also **in compliance** with the reporting requirements in "VII.Reporting".

IX. Other Requirements

IX.1 – The facility is **in compliance** with the requirement. Ken showed me the tariff sheet that shows compliance with the sulfur content requirements. The sheet references a company memo dated 10/26/05 which states that the sulfur content is less than 20 grains per 100 standard cubic feet.

IX.2 – The engines are **in compliance** with the condition. 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.

FGRULE285(mm)

This Flexible Group addresses routine and emergency venting of natural gas at the Northville Station.

Ken explained that the venting is part of 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.

A live test of a fire gate event is scheduled each year, typically in June. At this time, yearly maintenance activities are performed, which include checking the emergency systems, and checking connections, valves and pilot lights.

The Northville Station is **in compliance** with the requirements of this section.

FGCOLDCLEANERS

This Flexible Group contains the requirements for cold cleaners at the facility that meet identified criteria. Three cold cleaners are identified as being subject to the requirements of this Flexible Group. They are ZEP Dynaflo II units, Model No. 906101. These cold cleaners are used for the general cleaning of parts that are used in maintenance activities. Information in the facility files indicates that the units were installed in September 1994.

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.

During the inspection, Ken showed me work order records, and he stated that each month, a work order is created for the inspection of each cold cleaner. The staff assigned to the inspection goes through a checklist of compliance checks for the cold cleaners.

Ken provided me with a Material Safety Data Sheet (MSDS) for the material used in the cold cleaners, DYNA 143°. 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. He also provided me with a copy of the Parts Cleaner Maintenance and Inspection Record for 2014, an inspection scheduling form for December 1, 2014, and an inspection checklist. This information is attached to this report for reference. The cold cleaners all had notification posted that stated "Lid Closed When Not in Use".

The Northville Station is **in compliance** with the conditions in FGCOLD CLEANERS.

Federal Regulations

As described earlier, there is equipment at the Northville Station that is subject to 40 CFR Part 63, Subpart DDDDD and 40 CFR Part 63, Subpart ZZZZ. The 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.

Compliance Determination

Based upon the results of the April 7, 2015 site visit and subsequent records review, the Consumers Energy Northville Compressor Station appears to be in compliance with all of the terms and conditions of the facility's Renewable Operating Permit, as well as applicable State and Federal regulations.

Attachments to this report: a print out of the ROP and permit exempt equipment at the Northville Station, as of the writing of the last ROP; a printout of a diagram from Consumer Energy's website that shows the gas distribution system; a copy of the MSDS for the solvent used in the cold cleaners; a copy of maintenance related logs for the cold cleaners.

NAME Steve WeissDATE 9/25/15SUPERVISOR JK