

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

N392068997

FACILITY: Consumers Energy - Freedom Compressor Station		SRN / ID: N3920
LOCATION: 12201 PLEASANT LAKE RD, MANCHESTER		DISTRICT: Jackson
CITY: MANCHESTER		COUNTY: WASHTENAW
CONTACT: Amy Kapuga , Sr. Environmental Engineer		ACTIVITY DATE: 09/07/2023
STAFF: Mike Kovalchick	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Inspection of a gas compressor station. Inspection included a methane leak survey. No leaks were found.		
RESOLVED COMPLAINTS:		

Major Source for NOX-Major Source for HAPs-Full Compliance Evaluation (FCE)

Facility Contact

Joy Hwang: Environmental Engineer 517-768-3761 joy.hwang@cmsenergy.com

Frank Rand-Field Environmental Coordinator

Tara Guenther-Manger

Purpose

On September 7, 2023, AQD conducted an announced compliance inspection of Consumers Energy Freedom Compressor Station (Company) located near Manchester, Michigan in Washtenaw County. The purpose of the inspection was to determine the facility's compliance status with the applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules and the Company's Renewable Operating Permit (ROP) No. MI-ROP-N3920-2022a.

Facility Location

The facility is in a rural area. Residential homes are located about 1200 feet to the east of the facility on the shores of a small lake.

Facility Background

The facility was last inspected on March 23, 2021, and found to be in compliance.

The primary function of the Company is to transport natural gas primarily from the Panhandle Eastern Pipeline Company's supply lines to Consumers Energy's and Panhandles' pipeline systems. The Freedom Station uses natural gas fired reciprocating engines to power their natural gas compressors. The compressors are used to raise the pressure of the gas along the distribution pipeline system.

Regulatory Applicability

The facility ("Plant 3") operates under ROP No. MI-ROP-N3920-2022a that was last revised on April 17, 2023.

EUENGINE3-1 and EUENGINE3-2 currently operate under PTI 202-15A.

The facility is considered a major source under the Prevention of Significant Deterioration (PSD) regulations because the PTE of the facility for one or more regulated pollutants is greater than 250 tpy. None of the emission units at the source have gone through PSD review.

The facility is a major source of both NO_x under Title 40 CFR, Part 70 emitting above the major source thresholds of 100 tpy.

The facility is considered a major source of Hazardous Air Pollutants (HAPs) because the potential to emit for a single HAP is greater than 10 tons per year, and the potential to emit for all HAPs is greater than 25 tons per year. (Mostly of the HAPs consist of formaldehyde.)

The compressor engines and emergency backup generators are subject to federal standards under 40 CFR 63 Subpart ZZZZ for reciprocating internal combustion engines (RICE).

The boilers located on site are subject to 40 CFR 63 Subpart DDDDD for boilers and process heaters located at a major source.

The new compressor engines are subject to 40 CFR Part 60, Subpart JJJJ-Standards of Performance for Stationary Spark Ignition Internal Combustion engines. (Requirements for non-emergency engines greater than 500 brake HP, commencing construction after June 12, 2006 and manufactured on or after July 2, 2010.)

Arrival & Facility Contact

Visible emissions or odors were not observed upon my approach to the Company's facility. I arrived at 10:00 am, proceeded to the Company's front office to request access and meet with Joy Hwang. I was accompanied by Brian Merle with EGLE-AQD Jackson. Later, we were introduced to Frand Rand and Tara Guether who is the plant manger for the facility. All three accompanied us on the inspection.

We informed them of our intent to conduct a facility inspection, conduct a methane leak detection survey and to review the various records as necessary.

All three extended their full cooperation during our visit and fully addressed my questions.

Pre-Inspection Meeting

The pre-inspection meeting focused on outline which processes were currently active at the facility and discussion about conducting a methane survey.

The Company previously indicated during previous inspection that a normally 10 to 15 full time employees with some of the employees also working at other stations. The station is manned between 7:00 am to 3:30 pm M-F. Otherwise, activity at the station is monitored at of the gas control office in Jackson.

The Company previously indicated previously that the facility handles between 80 million scfm to 400 million scfm with much more being pumped during the Summer. This is because natural gas located south of the facility is pumped through the facility during the Summer on the way to underground storage fields to stockpile gas for Winter.

We discussed natural gas releases at the facility. Once per year they do a “Fire Gate” test. The Fire Gate system automatically detects natural gas leaks, fires, smoke etc. If triggered, the plant is automatically shut-in and natural gas in the process equipment is vented. During the test, less one million scfm is released. In 2023, only one emergency venting incident occurred. On June 5, 2023, there was a computer hardware issue that caused a 586 Mcf leak.

Onsite Inspection

Inspection Observations/Comments:

The control room to the facility was visited first. Operators in the control room indicated that the compressor station had 2 engines operating (Engine 3-1 & Engine 3-5) with a third engine (Engine 3-2) in the process of being brought online. Engine 3-1 was operating at 1676 hp while 3-5 was operating 2164 Hp. About 145 MMSCFM was being produced at the time of the visit.

The next part of the inspection consisted of doing a survey of the facility yard and main building looking for methane leaks using a SEM5000 Methane detector and a MethaneLaser Smart device. No leaks were found. Inside the building housing the engines, a perimeter path was followed. Methane concentrations inside the building averaged around 10 ppm. Installed LEL monitors at the 2 roof vents to the building were showing 0.0% LEL. The methane survey was conducted for informational purposes only and was not used as a compliance tool during the inspection. (Note: Leak repair scheduling is required per code – Michigan Gas Safety Code 192.703, 192.709, 192.711 and Michigan rules 318 and 327.)

Note also that the Company indicated that they are doing weekly leak checks in the yard using a similar device to the MethaneLaser device so it is unsurprising that no leaks were detected by EGLE.

Overall, all the process equipment at the facility appeared to be well maintained and in excellent shape.

Recordkeeping/Permit Requirements Review

-Permit Requirements Review (ROP)

ROP Source-Wide Conditions/FGRULE285(2)(mm) (Compliance)

The facility has been following the requirements of this section regarding the submittal of annual and semiannual certification and deviation reports. Additionally, they are aware of the procedures that must be followed to report the venting of natural gas for both routine maintenance and emergency release as outlined in permit exemption Rule 285(mm).

EUEGEN-3-25-01 (Not Operating)

This emission unit consists of one natural gas fire RICE with maximum rating of 1,818 HP for emergency power generation. A check of records for 2023 showed that it operated for 99 hours under emergency conditions and average about 1 hour per month for routine testing which shows compliance with the ROP.

EUBOIL-3-09-01 (Not Operating)

This emission unit consists of a natural gas fired auxiliary boiler with maximum heat input rating of 12.5 MMBTU/hr, equipped with low-NOx burner.

A check of records for 2023, showed that the 12-month rolling NOx emissions is calculated to be 0.32 tons. The Permit limit is 1.7 tons.

EUFGHT-3-04-01 (Not Operating)

This emission unit consists of one natural gas fired fuel heater with maximum heat input rating of 0.63 MMBTU/hr.

FGENGINES-P3/FGNSPSJJJJ/FGNESHAPZZZZ (Compliance)

These flexible groups cover five (5) natural gas fired, 4-stroke lean burn(4SLB) reciprocating internal combustion engines (RICE) with a maximum rating of 3,750 HP each. Each engine is equipped with an oxidation catalyst.

For 2023, a check of records shows that monthly rolling fuel usage of the five engines is averaging around 160 MMSCF which is well below permit requirement of 394 MMSCF.

For 2023, calculated VOC 12 month rolling average emissions for the five engines have dropped from 29 tons in January down to only 9 tons as of August.

The Company is up to date/conducted/passed all required emission testing per FGNSPSJJJJ and FGNESHAPZZZZ.

FGBLRSHTRS (Compliance)

This flexible group covers industrial boilers and process heaters fired by natural gas.

This is the flexible group for boilers and process heaters fired by natural gas. There are no emission or material limits with these units. On 1/28/2016 AQD received the Notification of Compliance Status (NOCS) that was submitted according to 40 CFR 63.7550 for boilers located at a major source subject to Subpart DDDDD. The initial tune-up and one-time energy assessment were conducted by Monarch Welding & Engineering.

FGCOLDCLEANERS (Compliance)

This flexible group covers one small cold cleaner located in Aux Building 1. The cold cleaner was not visited during this inspection.

FGTANKS (Compliance)

This flexible group consists of nine above ground storage tanks for holding oils, natural gas condensate, coolant and wash down water.

The tanks appeared to be well maintained and consistent with content/volume sizes listed in permit.

Post-Inspection Meeting

There was no post-inspection meeting. We thanked Joy for her time and corporation and departed the facility prior to noon.

Compliance Summary

The Company is in compliance with all their ROP permit requirements.

NAME Mike Koralchick

DATE 9/14/2023

SUPERVISOR 