

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Site Review

N168556709

FACILITY: TES Filer City Station		SRN / ID: N1685
LOCATION: 700 Mee Street, FILER CITY		DISTRICT: Cadillac
CITY: FILER CITY		COUNTY: MANISTEE
CONTACT: Austin Swiatlowski , IC&E Tech		ACTIVITY DATE: 12/03/2020
STAFF: Caryn Owens	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Records Review of TES Filer City. The Onsite inspection will be covered at a separate time.		
RESOLVED COMPLAINTS:		

Records Review for TES Filer City Station

The Department of Environment, Great Lakes, and Energy (EGLE) – Air Quality Division (AQD) reviewed the records of T.E.S Filer City Station (SRN: N1685) located at 700 Mee Street in Filer City, Manistee County Michigan. The records were received on Thursday, December 3, 2020. The field inspection will be conducted at a later date, and under a separate report.

The records review was to determine compliance with the monitoring, recordkeeping, and reporting requirements in the Renewable Operating Permit (ROP) MI-ROP-N1685-2015b. The site is currently a major source of hazardous air pollutants (HAPs), and is subject to the following: New Source Performance Standards (NSPS) Standards of Performance for Electric Utility Steam Generating Units promulgated in 40 CFR Part 60 Subpart Da; the National Emission Standard for Hazardous Air Pollutants (NESHAP) for: Stationary Reciprocating Internal Combustion Engines in 40 CFR Part 63 Subpart ZZZZ (RICE MACT); and the NESHAP for Coal and Oil Fired Electric Steam Utility Steam Generating Units promulgated in 40 CFR Part 63 Subparts A and UUUUU. The facility is also subject to the federal Compliance Assurance Monitoring (CAM) Rule in 40 CFR Part 64 for particulate matter. Emission limitations for sulfur dioxide meet the CAM exemption for Acid Rain monitoring requirements for EUBOILER01 and EUBOILER02.

AQD received a ROP Renewal Application submitted the Company on October 8, 2019. Conditions for the NESHAP for Coal and Oil-fired Electric Steam Utility Steam Generating Units promulgated in 40 CFR Part 63 Subparts A and UUUUU (MATS) will be incorporated in the next ROP Renewal. I added a brief summary on how the facility is currently complying with the MATS at the end of this Inspection report.

Additionally, the facility is subject to the federal Acid Rain Program in 40 CFR Part 72 and the Cross-State Air Pollution Control Rule (CSAPR) in 40 CFR Part 97; however, EGLE does not have delegation of the Acid Rain program and CSAPR, and these areas were not reviewed during the records review.

ROP Records Review

Source-Wide Conditions: The records associated with the Source-Wide Conditions consist of implementing and maintaining a fugitive dust plan. The most updated Fugitive Dust Control Plan was amended August 30, 2019, and submitted to AQD on October 8, 2020. The fugitive Dust Control Plan was reviewed and accepted by AQD. The monitoring associated with the Fugitive Dust Plan are recorded in the daily logbook at the facility, which will be reviewed during the onsite field inspection.

EULIMESTORAGE and EUASHUNLOAD: These two emission units consist of the lime storage and handling system consists of all lime handling and storage equipment including blowers, augers, conveyors, silos, and slurry tank up to the lime scrubbers. And the ash/by-products unloading system consists of all fly ash collection and transfer equipment conveyors, augers, piping, and silos along with an unloading baghouse. It also includes all bottom ash handling equipment including augers, conveyors and silos on EUBOILER01 and EUBOILER02. A rotary unloader adds moisture to the ash/by-products from the silo and loads ash/by-products into dump trucks through an enclosed tube. This emission unit is controlled by the ash silo bin vent filter, ash unloading baghouse, fly ash removal system baghouse, bottom ash system cyclone, and bottom ash removal system baghouse.

Lime storage and handling bin vent filters and the control equipment for EUASHUNLOAD must be installed, maintained and operated properly. The bin vent filters and baghouses have been installed and operating for many years, proper operation is verified through visible emission (VE) observations and noted in the daily logbook at the facility. The bin vent filters, baghouses, and logbook will be reviewed during the onsite field inspection.

The semi-annual reports and annual compliance reports for ROP certification were submitted to the AQD in a timely manner. During the reporting period no deviations were associated with EULIMESTORAGE and EUASHUNLOAD.

EUEMERGEN: This Emission Unit consists of a 175 kW (275 HP) existing natural gas-fired emergency generator. The EUEMERGEN is uncontrolled and is subject to 40 CFR Part 63 Subpart ZZZZ.

TES completes a weekly preventative maintenance plan for EUEMERGEN that inspects the battery water, engine oil, oil in the governor, and the water in the radiator. Additionally, TES completes a yearly maintenance plan that inspects the battery, belts, hoses and spark plugs and changes them if necessary. Additionally, TES changes the air filter, coolant filter, oil filter, engine oil and governor oil on an

annual basis. The most recent oil change was completed July 8, 2020. The facility chooses to change the oil on an annual basis, or earlier if determined necessary. An oil analysis has not been performed on EUEMERGEN. The facility completes weekly preventative maintenance checks, that inspects the battery water, the engine oil, oil in Governor, and the water level in the radiator. Based on the records review, there have been no malfunctions of EUEMERGEN.

The monthly usage for EUEMERGEN is stored in the control room. Based on the records from November 1, 2019 through October 31, 2020, EUEMERGEN operated a total of 24.2 hours. The maintenance records are attached to this report.

The semi-annual reports and annual compliance reports for ROP certification were submitted to AQD in timely manner. During the reporting period no deviations were associated with EUEMERGEN.

EUFIREPUMP: This Emission Unit consists of a 139 kW (187 HP) existing diesel-fired emergency fire pump used to power the emergency fire water pump. The diesel engine is uncontrolled and is subject to 40 CFR Part 63 Subpart ZZZZ.

TES completes a monthly preventative maintenance plan for EUFIREPUMP that inspects the coolant levels, battery fluid levels and electrolyte levels, air filter (and changes it if needed), and all the hoses and belts. The most recent oil change was completed May 8, 2020. The facility does not utilize the oil analysis program at this time.

The monthly usage for EUFIREPUMP is stored in the control room. Based on the records from November 1, 2019 through October 31, 2020, EUFIREPUMP operated a total of 5.0 hours. The maintenance records are attached to this report.

The semi-annual reports and annual compliance reports for ROP certification were submitted to AQD in timely manner. During the reporting period no deviations were associated with EUFIREPUMP.

FGBOILERS: This flexible group includes Boiler #1 and #2 and their associated dry scrubbing system and baghouse. Each boiler is a spreader-stoker firing configuration. The primary fuel is coal with the following supplemental fuels: wood, TDF, and natural gas. The facility also has the options to use construction/demolition material and petroleum coke, but the facility has not used these fuel types at least since at least January 2016. The nominal heat input rating of each boiler is 384 MMBTU/hr including two low nitrogen oxide (NOx) natural gas-fired burners per boiler, with each burner rated at 100 MMBTU/hr. FGBOILERS is controlled by a scrubber and baghouse for each boiler. Additionally, each boiler has low NOx natural gas-fired burners.

I. Emission Limits:

Compliance with the sulfur dioxide (SO₂), NO_x, and carbon monoxide (CO) emissions from the FGBOILERS are demonstrated by CEMS. Particulate matter (PM) and Total non-methane hydrocarbons (NMHC) are demonstrated by stack testing. Records of the emission limits are kept electronically and calculated through the source Data Acquisition System (DAS).

Opacity from the FGBOILERS is limited to 10% and is continuously recorded using a continuous opacity monitor system (COMS). Based on the records reviewed, the daily max opacity ranged between 1.83% to 2.20% for EUBOILER01, and 1.00 to 1.72% for EUBOILER02, well below the 10% emission limits.

PM emissions for FGBOILERS are limited to 0.03 pounds per million BTU (lb/MMBtu) heat input and 11.5 pounds per hour. Demonstration of compliance with the limits is performed via stack testing. Stack testing for PM was last performed in March 2019 (completed during the last PM Testing for MATS LEE Status) and indicated that the PM emissions from EUBOILER01 were 0.0010 lb/MMBtu heat input, and EUBOILER02 emissions were 0.0009 lb/MMBtu heat input. Stack testing for ROP compliance was last performed July 26th 2017 and indicated PM emissions were 0.68 in EUBOILER01 and 0.79 pounds per hour in EUBOILER02. The PM emissions were below the permitted emission limits.

SO₂ emissions from each boiler are limited to 0.5 lb/MMBtu heat input (based upon a 30-day average) and 0.7 lb/MMBtu heat input (based upon a 24-hour daily average). Total SO₂ emission limits from both boilers combined are 6.45 tons per day and 1681.9 tons per year (based upon a 12-month rolling time period). Furthermore, SO₂ emissions must be 10% of the potential SO₂ emission rate, based upon a 30-day rolling average. In other words, the facility must reduce the SO₂ emissions from each boiler by at least 90%. The facility implements CEMS to demonstrate compliance with the numerous emission limits. The records reviewed indicated the lowest SO₂ reduction was 95.92% for EUBOILER01, and 96.47% for EUBOILER02. Based on review of the 2020 Quarterly emission data, the highest reported emissions from EUBOILER01 were 0.043 lb/MMBtu based on a 30-day rolling average, and 0.137 lb/MMBtu based on a 24-hour rolling average. The highest reported emissions from EUBOILER02 were 0.037 lb/MMBtu based on a 30-day rolling average, 0.074 lb/MMBtu based on a 24-hour rolling average. Additionally, the 2020 Quarterly Emissions data indicated SO₂ emissions were 0.9 tons per day from both boilers combined. The records also indicated the highest SO₂ emissions reported were 139.0 tons per year based on a 12-month rolling time period for both boilers combined. The SO₂ emissions were reported below the permitted emission limits.

NO_x emissions from each boiler are limited to 0.60 lb/MMBtu heat input, based upon a 30 day rolling average. NO_x emissions are also limited to 2,018 tons per 12-month rolling time period from both boilers combined. Similar to SO₂, the NO_x emissions are monitored and recorded via CEMS to demonstrate compliance with the emission limits. Based on review of the 2020 Quarterly emission data, the

highest reported NOx emissions from EUBOILER01 were 0.436 lb/MMBtu based on a 30-day rolling average. The highest reported NOx emissions from EUBOILER02 were 0.395 lb/MMBtu based on a 30-day rolling average. Based on records from November 1, 2019 through October 31, 2020, NOx emissions were reported as 1358.0 tons per year based on a 12-month rolling time period for both boilers combined. The NOx emissions were reported below the permitted emission limits.

Carbon monoxide (CO) emissions from each boiler is limited to 0.3 lb/MMBtu heat input based upon a 24-hour rolling average and 115.2 pounds per hour based upon a 24-hour rolling average. Total CO emission limits from the boilers are limited to 1,009.2 tons per 12 month rolling time period. As with SO2 and NOx, CO emissions are also monitored and recorded by the CEMS. Based on review of the emissions data for the chosen months of October 2019, January 2020 and June 2020, the highest reported NOx emissions from EUBOILER01 were 0.112 lb/MMBtu based on a 24-hour rolling average, and 42.4 pounds per hour based on a 24-hour rolling average. The highest reported NOx emissions from EUBOILER02 were 0.035 lb/MMBtu based on a 24-hour rolling average, 15.1 based on a 24-hour rolling average. Based on the records reviewed, CO emissions were reported as 171.1 tons per year based on a 12-month rolling time period for both boilers combined. The CO emissions were reported below the permitted emission limits.

Total non-methane hydrocarbons (NMHC) emissions from each boiler are limited to 4.6 pounds per hour. The method used to determine compliance with the limit is stack testing. Stack testing was last performed in August 2017 and indicated that NMHC emissions were 0.18 pounds per hour from EUBOILER01 and -0.02 pounds per hour from EUBOILER02. The measured NMHC concentrations for EUBOILER02 adjusted for analyzer bias resulting in the negative value, indicating NMHC concentrations were near or below the detection limit of the analyzer.

II. Material Limits:

The maximum sulfur content of the coal is 3% based upon a heating value of 12,200 BTU per pound of coal. Records submitted by the company indicate that the sulfur content of coal delivered in November 15, 2020 was 0.48% with a heating value of 12,633 BTU per pound. The sulfur content in the coal was within the material limits.

The charge rate of wood to the boilers cannot exceed 820,000 pounds (410 tons) per day. Records reviewed (attached) indicate that the material limit has not been exceeded. The highest daily average value was 230 tons from November 1, 2019 through October 31, 2020.

The TDF feed rate is limited to 2 tons per hour, based upon a daily average per boiler. Records reviewed indicate the highest average TDF feed rate to EUBOILER01 was 0.45 tons per hour and 0.43 tons per hour to EUBOILER02.

Construction and demolition material (C/D material) is limited to 200,000 pounds per day and 18,282 tons per 12 month rolling time period per boiler. The facility has not burned C/D material since initial testing and records show that no C/D material has been burned.

Petroleum coke is limited to 130,800 pounds (65.4 tons) per day per boiler. Records show that the facility removed all the petroleum coke from the site by March 31, 2016, and the facility does not plan to store or combust petroleum coke in the future.

III. Process/Operational Restrictions:

The facility is not allowed to operate the boilers unless a maintenance and malfunction abatement management plan (MMP) is implemented and maintained. An amended MMP was previously submitted to and approved by AQD staff. TES appears to be following the MMP.

The facility is also not allowed to operate the boilers unless the baghouses and scrubbers are installed and operating properly. Based on the low opacity readings, it can be assumed that the baghouses are operating properly. Based on the SO₂ reduction efficiency of greater than 90% it appears that the scrubbers are operating properly. The facility also supplied records to show that the baghouses and scrubbers are serviced on a regular basis. The maintenance records are attached.

Additionally, the facility submitted records showing that the Oxygen probes associated with EUBOILER01 and EUBOILER02 were serviced December 12, 2019 and June 23, 2020. The fans and dampers associated with the boilers appear to be serviced on a weekly basis.

COMS and CEMS are required to be operated and data recorded during all periods of operation. This is addressed in the quarterly excess emission reports which have been reviewed by AQD at the time the reports were received.

IV. Design/Equipment Parameters:

There are design/Operational requirements for the COMS and CEMS. These requirements are addressed in the excess emission reports, during stack testing, and RATAs).

V. Testing/Sampling:

Stack testing is required for particulate matter and total non-methane hydrocarbon emission rates. The testing was performed in March 2018 and August 2017, respectively, and demonstrated compliance with the emission limits.

VI. Monitoring/Recordkeeping:

The COMS and CEMS are reported to AQD on a quarterly basis. The COMS are used as a CAM indicator for proper functioning of the baghouses. CAM reports have been submitted and reviewed.

VII. Reporting:

The semi-annual reports and annual compliance reports for ROP certification were submitted to AQD in timely manner. During the reporting period the permittee reported all monitoring and associated recordkeeping requirements. Exceedances of the limit, when they occur are reported throughout the year and in quarterly excess emission reporting. Semi-annual reporting of CAM excursion/exceedances, and monitor downtime were submitted to the AQD in timely manner. During the reporting period from November 1, 2019 through October 31, 2020, the permittee reported no CAM excursion/exceedances for opacity and 12 incidents of monitor downtime. Testing protocols and test reports, established in the ROP, were submitted within appropriate time frames. NSPS Subpart Da required reports were submitted quarterly with EER.

IX. Other Requirements:

The facility appears to comply with the CAM and the NSPS 40 CFR Part 60 Subpart Da.

A C/D Waste Wood Monitoring Plan has been approved by the AQD and is implemented to determine acceptable C/D wood fuel for the boilers. However, as previously stated, no C/D material is currently stored or used at the site.

The facility has submitted an initial notification and a Notification of Compliance Status with regards to 40 CFR Part 63 Subpart UUUUU (MATS). This is discussed further below in FGMATS.

FGFUELSTORAGE: This Flexible Group is for the coal and coal/petroleum coke piles (EU_{COALPETCKSTORAGE}), wood piles (EU_{WOODSTORAGE}), construction demolition material piles (EU_{CDMTSTORAGE}), as applicable, and all fuel handling equipment including augers, conveyors, and hopper up to EU_{BOILER01} and EU_{BOILER02}. The wood handling area contains a baghouse for particulate control.

Particulate matter emissions from the EU_{WOODSTORAGE} area is limited to 0.10 pounds per 1,000 pounds of exhaust gases and the VE limit from EU_{COALPETCKSTORAGE} area is 5% opacity. The methods of compliance for the limits are non-certified VE observations. The non-certified VE observations from

the coal storage pile and the wood handling baghouse are performed at least once per day. The observations are noted in the daily logbook in the control room as well as any corrective actions, if performed. The C/D material storage and petroleum coke is included in the VE requirement but based on the records reviewed, no C/D or petroleum coke material is used at the facility.

The semi-annual reports and annual compliance reports for ROP certification were submitted to AQD in timely manner. During the reporting period the permittee was compliant with all monitoring and associated recordkeeping requirements in FGFUELSTORAGE.

FGMATS: TES is subject to 40 CFR Part 63 Subpart UUUUU, also known as Mercury Air Toxic Standards (MATS) for existing coal fired electric utility steam generating unit(s) rated more than 25 MW. The specific Conditions on how TES will be following the MATS have not been incorporated into the ROP as of the date of this report. The ROP is in Renewal and will have MATS Conditions included. TES has conducted stack testing to show compliance with the mercury and particulate matter emission limits in the MATS, and they use the SO2 CEMS as a surrogate for hydrogen chloride (HCl). The facility has met the Low Emitting Electrical Generating Unit (LEE) status for PM. The most recent testing for PM was performed on in July 2019 and was the 12th compliant test to meet the LEE status, allowing the reduced testing frequency. The most recent testing for Hg was performed on in October 2019, and was just completed October 2020, but the results haven't been received by AQD at this time. TES PM testing frequency will be once every three years to show LEE status and Hg on annual basis.

The source has submitted the following notifications and/or reports: An Initial Notification on April 12, 2012; A Notification of Compliance Status on July 15, 2016; MATS Semi-Annual Periodic Reports on February 26, 2020 and September 8, 2020, which indicated compliance with the heat input based emission limits for all MATS subject pollutants and a tune-up last conducted January 25, 2018 for both Boilers. The notifications and Reports were submitted within appropriate time frames and reviewed by AQD at the time they were received. As previously stated, the facility achieved LEE Status for PM on July 31, 2019. Based on the reports reviewed, there were no malfunctions.

NAME _____

DATE _____

SUPERVISOR _____