

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

N238864851

FACILITY: GRAYLING GENERATING STATION LTD PTNR		SRN / ID: N2388
LOCATION: 4400 W FOUR MILE RD, GRAYLING		DISTRICT: Gaylord
CITY: GRAYLING		COUNTY: CRAWFORD
CONTACT: Rick Laur , Environmental Safety Coordinator		ACTIVITY DATE: 07/28/2022
STAFF: Becky Radulski	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY22 scheduled inspection and records review		
RESOLVED COMPLAINTS:		

Traveled to N2388 Grayling Generating Station (GGS) on July 28, 2022 to conduct a Full Compliance Evaluation (FCE) FY20 scheduled inspection to determine compliance with MI-ROP-N2388-2014a (issued September 4, 2014, revised June 16, 2016).

GGS contacts for the inspection were Mr. Rick Lauer, Environmental Safety Coordinator (Richard.laur@cmsenergy.com, 989-348-4575 x112, 989-965-6280) and CEMS Technician Dave Luck.

LOCATION

GGS is located at 4400 West Four Mile Road, Grayling, in Crawford County, on the north side of Four Mile Rd. Adjacent to the west of Grayling Generating Station is AJD Forest Products (sawmill); to the south is Hydrolake Inc. (utility pole storage yard); to the east is Arauco North America (particle board). Across the road on the south side of Four Mile Rd., is Weyerhaeuser (OSB manufacturer) and Georgia Pacific (chemical manufacturer - liquid resin and formaldehyde). This is a rural location with very few residential dwellings. The city of Grayling is located approximately five miles north of Four Mile Rd.

SOURCE DESCRIPTION

The facility is an electric utility facility which was installed in January 1992 and includes one 523 MM Btu/hr wood and tire-derived-fuel (TDF) fired boiler equipped with natural gas auxiliary burners. The boiler is of a spreader-stroker design, and is equipped with a multiclone dust collector in order to capture and re-inject flyash, an electrostatic precipitator (ESP) for the control of particulate matter, and a selective non-catalytic reduction (SNCR) system for the control of nitrogen oxide. The facility receives both chipped wood and TDF by truck and uses these fuels in the boiler to produce steam. The boiler is initially started on natural gas then wood and TDF are added. The steam is used to produce approximately 36 megawatts (MW) of electricity at full capacity. The ash is collected, treated with water, and transported to a landfill for disposal.

GGs typically operates at low load, which is 18 MW. During a previous inspection in 2014, the facility considered 10 MW to be low load. However, operating at 10 MW was found to be hard on the system, and a new load low of 18 MW was established. The station can operate as high as 36 MW when electricity demand is high. Typically, except during a RATA, the station operates at either 18 or 36 MW.

REGULATORY DISCUSSION

The facility is subject to Administrative Consent Order (ACO) No. 2022-14, effective date 7-28-22. The ACO will be in effect for a minimum of three years. The ACO was required to resolve discrepancies with flow data observed during the RATA and ROP testing in November of 2020 and confirmed in April 2021. To comply with the ACO, GGS shall perform semi-annual 2-load RATAs. If the relative accuracy during any RATA is above 7.5%, then GGS shall perform a RATA the subsequent quarter.

The facility is subject to MI-ROP-N2388-2014a, which was originally issued September 4, 2014 and revised June 16, 2016. The revision was necessary as the Cross State Air Pollution Rule (CSAPR) went into effect replacing the Clean Air Interstate Rule (CAIR). The ROP is currently in renewal – the facility submitted their ROP renewal application and received their application shield.

The facility is a major source as it has the potential to emit over 100 tons per year of nitrogen oxides (NOx), carbon monoxide (CO) and particulate matter (PM).

The facility is not major for hazardous air pollutants (HAPs).

EUBOILER is subject to Compliance Assurance Monitoring (CAM) for PM because the potential to emit PM is over 100 tons per year uncontrolled. The facility uses a Continuous Opacity Monitor (COM) to monitor opacity and must operate within 0-5 percent opacity.

EUBOILER uses a multi clone dust collector and electrostatic precipitator (ESP) to control PM.

EUBOILER uses a selective non-catalytic reduction system (SNCR) to control NOx.

EUBOILER is subject to 40 CFR, Part 60, Subpart Db – Industrial, Commercial, Institutional Generating Units.

EUBOILER is subject to 40 CFR, Part 63, Subpart JJJJJJ – Industrial, Commercial and Institutional Boilers Area Sources. The AQD is not delegated the regulatory authority for this area source MACT.

EUEMERGENERATOR and EUFIREPUMP (FGCIRICEMACT) are subject to 40 CFR, Part 63, Subpart ZZZZ – RICE Area Source MACT. The AQD is not delegated the regulatory authority for this area source MACT.

INSPECTION NOTES

The facility was operating during the inspection. No visible emissions were noted from the exhaust stack.

The current contract for GGS expires in 2027. The plant has had several major improvements in the past few years, including the current generator rewind.

GGS had less wood chip fuel on hand than it typically would. This is due to the boiler being down for several months in 2020, as well as competing sources requiring wood chips in the area.

Startup takes about 5 hours. The first 3 hours are natural gas, then wood fuel is added.

RECORDS REVIEW

SOURCE-WIDE

III.1, IX.1 requires a fugitive dust control program for all material storage piles, all material handling equipment, all plant roadways, and the plant yard. The facility has an approved Fugitive Dust Control Plan on file. The plan is reviewed annually.

III.2, IX.2 requires a Preventative Maintenance/Malfunction Abatement Plan (PM/MAP). The facility has an approved PM/MAP on file.

VI.1 requires records be kept of street and parking lot washing/sweeping. Records are maintained and kept in the control room at the powerhouse. Records were reviewed onsite.

EUBOILER

This emission unit consists of one 523 MM Btu/hr. wood and TDF fired boiler equipped with natural gas auxiliary burners. The boiler is of a spreader-stroker design. The steam is used to produce approximately 36 megawatts of electricity at full capacity. The boiler is equipped with a multi clone dust collector in order to capture and re-inject fly ash, an ESP for the control of particulate matter, and a SNCR system for the control of nitrogen oxide.

I. Emission Limits

Pollutant	Limit	Time Period/ Operating Scenario	
1. Particulate	0.03 pounds per million Btu (lb/MMBtu) heat input^{2a}	Test Protocol*	0.0028 lbs/MMBtu
2. Particulate	12.0 pounds per hour²	Test Protocol*	1.51 lbs/hr
3. Particulate	25.2 tons per year²	12-month rolling time period	6.2 tpy
7. Nitrogen Oxides	343.6 tons per year²	12-month rolling time period	235.0
10. Carbon Monoxide	916.3 tons per year²	12-month rolling time period	330.1
11. Volatile Organic Compounds	0.017 lb/MMBtu heat input²	Test Protocol*	0.010 lbs/MMBtu
12. Volatile Organic Compounds	8.9 pounds per hour²	Test Protocol*	4.9 lbs/hr

Pollutant	Limit	Time Period/ Operating Scenario	
13. Volatile Organic Compounds	39.0 tons per year ²	12-month rolling time period	24.0
16. Sulfur Dioxide	39.0 tons per year ²	12-month rolling time period	29.1 tpy
17. Lead	0.02 pounds per hour ²	Test Protocol*	0.02 lbs/hr
18. Lead	0.10 tons per year ²	12-month rolling time period	0.01 tpy
19. Sulfuric Acid Mist	0.003 lb/MMBtu heat input ²	Test Protocol*	0.003 lbs/MMBtu
20. Sulfuric Acid Mist	1.5 pounds per hour ²	Test Protocol*	1.2 lbs/hr
22. Benzo(a)pyrene	0.005 pounds per hour ¹	Test Protocol*	1.27E-06 lbs/hr
23. Arsenic	0.02 pounds per hour ¹	Test Protocol*	0.02 lbs/hr
24. Cadmium	0.012 pounds per hour ¹	Test Protocol*	0.00023 lbs/hr
25. Chromium (total)	0.012 pounds per hour ¹	Test Protocol*	0.0022 lbs/hr
26. Manganese	0.061 pounds per hour ¹	Test Protocol*	0.0027 lbs/hr
27. Zinc Oxide, measured as Zinc	9.5 pounds per hour ¹	Test Protocol*	0.041 lbs/hr

*based on 11/10/2020 stack test

II.1 Natural gas is limited to 53,300 standard cubic feet per hour, based on 24-hour daily average.

II.2 Tire Derived Fuel (TDF) is limited to 3,750 pounds per hour, based on 24-hour daily average.

III.1 requires the mechanical dust collectors, the electrostatic precipitator and selective non-catalytic reduction system to be installed and operating properly.

III.2 requires EUBOILER to begin firing from a cold start on natural gas only. The facility reports that the boiler only operates in this manner.

III.4 requires a biennial tune-up of EUBOILER no more than 25 months after the previous tune-up, the most recent tune up took place in 2021.

IV.1 The span value of all CEMS and COMS shall be 2.0 times the lowest emission standard. The span values are set during equipment design.

IV.2 The CEMS shall be installed, calibrated, maintained and operated in accordance with regulations. RATAs are completed annually. Cylinder gas audits are provided with reporting.

IV.3 Requires the visible emissions from EUBOILER be monitored and recorded on a continuous basis. EUBOILER has a continuous opacity monitor (COMs) to monitor visible emissions on a continuous basis.

IV.4 The COMS shall be calibrated, maintained and operated in accordance with regulations. This is confirmed during RATAs and discussions with plant personnel.

V.1, 2 requires testing emission rates from EUBOILER every five years. The most recent test was November 10, 2020.

V.3, 4 requires the annual audit of COMS and CEMS. The most recent completed RATA was July 27, 2022.

VIII.1 requires the stack to be a maximum of 94 inches wide and minimum 220 feet above ground. Based on visual assessment, the stack appears to meet these conditions.

Conclusions:

Based on the inspection and records review, N2388 Grayling Generation is in compliance with the requirements of MI-ROP-N2388-2014a.

NAME Becky Radubski

DATE 7-28-2022

SUPERVISOR Shane Nixon