

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

N238853419

|  |                                      |                                  |
|--|--------------------------------------|----------------------------------|
| <b>FACILITY:</b> GRAYLING GENERATING STATION LTD PTNR          |                                      | <b>SRN / ID:</b> N2388           |
| <b>LOCATION:</b> 4400 W FOUR MILE RD, GRAYLING                 |                                      | <b>DISTRICT:</b> Gaylord         |
| <b>CITY:</b> GRAYLING  |                                      | <b>COUNTY:</b> CRAWFORD          |
| <b>CONTACT:</b> Edward Going , Plant Manager - current RO 2018 |                                      | <b>ACTIVITY DATE:</b> 08/12/2020 |
| <b>STAFF:</b> Becky Radulski                                   | <b>COMPLIANCE STATUS:</b> Compliance | <b>SOURCE CLASS:</b> MAJOR       |
| <b>SUBJECT:</b> FY20 inspection and records review             |                                      |                                  |
| <b>RESOLVED COMPLAINTS:</b>                                    |                                      |                                  |

Traveled to N2388 Grayling Generating Station on August 12, 2020 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). Present for the inspection were Mr. Rick Lauer, Environmental Safety Coordinator (Richard.laur@cmsenergy.com, 989-348-4575 x112, 989-965-6280), Shawn, CEMS (Dave was on vacation) and AQD Inspector Becky Radulski, Gaylord District Office. This is a Title V source subject to the Renewable Operating Program (ROP). AQD Staff arrived on site at approximately 9:50 am.

In response to COVID-19, there are new entrance procedures at the site. There is a new fenced gate with a kiosk to request entrance. Once the gate is remotely opened, Staff was directed to travel to the Admin Building. Persons are required to wear a mask, have their temperature taken and sign in.

### **LOCATION**

Grayling Generating Station 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.

Grayling Generating Station 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 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 not operating during the inspection. The facility was down for scheduled shutdown in March of 2020. A part was found that needed to be sent out for repair and replaced, so the plant did not come back online until the end of June. The plant operated 7 days, then had a catastrophic failure, resulting in a generator rewind (rebuild). The boiler is expected to be down until November.

Rick Laur has been in the Environmental Safety Coordinator for approximately 1 year.

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

Due to the unplanned shut down, there is a large amount of wood fuel onsite. When Cadillac Renewal shutdown, the woodchips from there came to Grayling Generation. The wood fuel is at 90-100 days out, which is at the high end for fuel storage. The site continues to move the fuel pile, and use temperature probes and a FLIR to search for hot spots. The TDF pile is also at a high level.

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. The sweeping is on a schedule, done every Tuesday or more if required.

### **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**

| <b>Pollutant</b>     | <b>Limit</b>  | <b>Time Period/ Operating Scenario</b> |  |
|----------------------|---|--|--|
| 1. Particulate       | 0.03 pounds per million Btu (lb/MMBtu) heat input <sup>2a</sup>                                   | Test Protocol*                         |  |
| 2. Particulate       | 12.0 pounds per hour <sup>2</sup>   | Test Protocol*                         |  |
| 3. Particulate       | 25.2 tons per year <sup>2</sup>   | 12-month rolling time period           |  |
| 4. Visible emissions | 10% opacity, except for one 6-minute average per hour of not more than 20% opacity. <sup>2b</sup> | 6-minute average                       |  |
| 5. Nitrogen Oxides   | 0.15 lb/MMBtu heat input <sup>2c</sup>  | 30-day rolling average                 |  |
| 6. Nitrogen Oxides   | 78.5 pounds per hour <sup>2</sup>   | 30-day rolling average                 |  |
| 7. Nitrogen Oxides   | 343.6 tons per year <sup>2</sup>  | 12-month rolling time period           |  |
| 8. Carbon Monoxide   | 0.40 lb/MMBtu heat input <sup>2c</sup>  | 24-hour rolling average                |  |
| 9. Carbon Monoxide   | 209.2 pounds per hour <sup>2</sup>  | 24-hour rolling average                |  |
| 10. Carbon Monoxide  | 916.3 tons per year <sup>2</sup>  | 12-month rolling time period           |  |
|                      | 0.017 lb/MMBtu heat input <sup>2</sup>  | Test Protocol*                         |  |

| Pollutant                        | Limit                                  | Time Period/ Operating Scenario |  |
|----------------------------------|--|---------------------------------|--|
| 11. Volatile Organic Compounds   |  |                                 |  |
| 12. Volatile Organic Compounds   | 8.9 pounds per hour <sup>2</sup>       | Test Protocol*                  |  |
| 13. Volatile Organic Compounds   | 39.0 tons per year <sup>2</sup>        | 12-month rolling time period    |  |
| 14. Sulfur Dioxide               | 0.07 lb/MMBtu heat input <sup>2c</sup> | 24-hour rolling average         |  |
| 15. Sulfur Dioxide               | 11.2 pounds per hour <sup>2</sup>      | 24-hour rolling average         |  |
| 16. Sulfur Dioxide               | 39.0 tons per year <sup>2</sup>        | 12-month rolling time period    |  |
| 17. Lead                         | 0.02 pounds per hour <sup>2</sup>      | Test Protocol*                  |  |
| 18. Lead                         | 0.10 tons per year <sup>2</sup>        | 12-month rolling time period    |  |
| 19. Sulfuric Acid Mist           | 0.003 lb/MMBtu heat input <sup>2</sup> | Test Protocol*                  |  |
| 20. Sulfuric Acid Mist           | 1.5 pounds per hour <sup>2</sup>       | Test Protocol*                  |  |
| 21. Sulfuric Acid Mist           | 6.6 tons per year <sup>2</sup>         | 12-month rolling time period    |  |
| 22. Benzo(a) pyrene              | 0.005 pounds per hour <sup>1</sup>     | Test Protocol*                  |  |
| 23. Arsenic                      | 0.02 pounds per hour <sup>1</sup>      | Test Protocol*                  |  |
| 24. Cadmium                      | 0.012 pounds per hour <sup>1</sup>     | Test Protocol*                  |  |
| 25. Chromium (total)             | 0.012 pounds per hour <sup>1</sup>     | Test Protocol*                  |  |
| 26. Manganese                    | 0.061 pounds per hour <sup>1</sup>     | Test Protocol*                  |  |
| 27. Zinc Oxide, measured as Zinc | 9.5 pounds per hour <sup>1</sup>       | Test Protocol*                  |  |

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. (need the date)

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 October 21, 2015. The 5 year test was scheduled to take place in the summer of 2020, however due to the boiler being down, the unit will instead be tested once it is operational, which is expected to be November 2020.

V.3, 4 requires the annual audit of COMS and CEMS. The most recent completed RATA was May 28, 2019. A RATA was scheduled for May 5, 2020 but could not test due to the boiler being down. A revised date of July 23, 2020 was offered, but had to be postpone due the catastrophic failure. The unit will have the RATA completed once the boiler is operational, which is expected to be November 2020.

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 Radulski

DATE 8-12-2020

SUPERVISOR Shane Nixon