

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

B197651350

FACILITY: J.B. Sims Generating Station		SRN / ID: B1976
LOCATION: 1231 N. Third St., GRAND HAVEN		DISTRICT: Grand Rapids
CITY: GRAND HAVEN		COUNTY: OTTAWA
CONTACT: Paul Cederquist , Environmental Compliance Specialist		ACTIVITY DATE: 10/29/2019
STAFF: Kaitlyn DeVries	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: The purpose of the inspection was to determine compliance with MI-ROP-B1976-2018.		
RESOLVED COMPLAINTS:		

On Tuesday October 29, 2019 Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) staff Kaitlyn DeVries (KD) and Scott Evans (SE) conducted an unannounced, scheduled inspection of Grand Haven Board of Light and Power – J.B. Sims Generating Station (J.B. Sims) located at 1231 N. Third St., Grand Haven Michigan. The purpose of the inspection was to determine compliance with MI-ROP-B1976-2018. In addition to the scheduled inspection, J.B Sims was conducting a stack test.

Facility Description

J.B. Sims is an electric generating station that utilizes pulverized Appalachian coal as the primary fuel, and historically had three (3) units. Presently, only one (1) primary generating unit, Unit 3, is in use. The other two (2) units were retired in 1989. Unit 3 was installed in 1983 and has a maximum heat capacity of 785 MMBTU/Hr producing up to 80 megawatts (gross) per hour. Unit 3 utilizes low-NOx burners, a four-field electrostatic precipitator (ESP) and a wet lime/limestone scrubber. A Selective Non-Catalytic Reduction (SNCR) System is also installed at the facility but is not in use. Further discussion of the control devices as well as Unit 3 will follow in the Compliance Evaluation portion of this report. Per conversations with Mr. Cederquist, Unit 3 is set to be permanently retired mid-2020.

Regulatory Analysis

The facility is a major source for Sulfur Dioxide, Nitrogen Oxides, and Hazardous Air Pollutants, and is subject to the Title V program. The facility is also subject to the Prevention of Significant Deterioration (PSD) regulations of Title 40 of the Federal Regulations, Part 52.21 and Michigan’s Part 18 rules.

In addition to the above-mentioned Stated rules, there are other federal regulations that are applicable for various emission units at the source. EU-AUX-BOILER is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR Part 63 Subpart DDDDD for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Source Facilities. EU-EGE is subject to the provisions of the New Source Performance Standards (NSPS) of 40 CFR Part 60 Subpart IIII for Compression Ignition Internal Combustion Engines and to the provisions of NESHAP 40 CFR Part 63 Subpart ZZZZ for Reciprocating Internal Combustion Engines. The provisions of Subpart ZZZZ are met via compliance with Subpart IIII. EU-MTL_HNDLNG is subject to the provisions of NSPS 40 CFR Part 60 Subpart Y for Coal Preparation and Processing Plants. However, the opacity limits of this standard have been subsumed by the limits from Rule 331. Further detail on this can be found in the Compliance Evaluation portion of this report. EU-UNIT-3-BLR is subject to several Federal Regulations including: NSPS 40 CFR Part 60 Subpart Da for Electric Utility Generating Units which were constructed after September 18, 1978, NESHAP 40 CFR Part 63 Subpart UUUUU for Coal and Oil Fired Electric Utility Generating Units, also known as the Mercury and Air Toxics Standard (MATS), the Acid Rain Program of 40 CFR Part 72, the Cross State Air Pollution Rules (CSAPR) NOx Ozone Season Group 2 Trading Program and SO2 Group 1 Trading Program of 40 CFR Part 97 Subpart EEEEE and CCCCC, respectively. Unit 3 is also subject to the Compliance Assurance Monitoring requirements of 40 CFR Part 64. These regulations will be further evaluated in the compliance evaluation portion of this report.

No stack dimensions were measured during the inspection, but all dimensions appeared correct.

Compliance Evaluation

EU-MTL_HNDLNG

This emission unit covers the coal, lime, and ash handling processes. The Particulate Matter (PM) emissions are controlled by enclosures, baghouses, and dust suppression measures.

It had recently rained, therefore the coal yard appeared well groomed and no fugitive dust was noted. Additionally, AQD has not received any dust complaints. No new coal had been received by the facility as the facility is slated to be retired by Mid-2020, or when the Coal is gone, if that comes before Mid-2020.

PM emissions are limited to 0.03 grain per dry standard cubic foot of exhaust gas from each vent. No visible emissions are allowed at any time from the lime/limestone and ash handling and storage equipment or the coal conveyor and coal elevators. The coal receiving hoppers have a 5% opacity limit, per a 6-minute average. The limits established under Rule 301(1)(c), as defined in the permit, are more stringent than for the lime/limestone and ash handling and storage equipment or the coal conveyor and coal elevators and the coal receiving hoppers is more stringent than what is established under 40 CFR Part 60 Subpart Y, therefore that limit was subsumed. No opacity was noted from any of the equipment during the inspection.

The facility maintains a fugitive dust control plan, and no visible emissions were noted from the yard, or anywhere at the facility. The facility also conducts checks of the baghouses associated with the material handling, by conducting checks of the alarm systems and differential pressure. Records of the alarm system checks, differential pressure, and non-certified Visual inspections were reviewed on site. The facility had recently come back up from an outage, therefore the records were only kept on days the facility was operating. All maintenance is also documented by the facility.

EU-UNIT3_BLR

Since the retirement of Units 1 and 2, J.B. Sims currently only operates EU-UNIT3_BLR, which is an 80 (gross) megawatt pulverized coal-fired boiler with oil and natural gas startup systems. The unit was running at 36.5 MW load at the time of the inspection. Mr. Cederquist explained that they had one (1) of the load mills go down, so they will not be able to maintain a load greater than 37 MW. He went on to state that they intend to run around 37 MW for the rest of the year anyhow. The unit has a wet lime scrubber and a four-field dry electrostatic precipitator (ESP), low-NOx burners, and a selective non-catalytic reduction (SNCR) urea system. The facility is not currently using the SNCR. The SNCR, installed in 2010, is not in use because the facility does not currently need it to meet the NOx requirements of CSAPR and the allocated NOx allowances. The facility does, however, maintain an operating procedure in the event that this equipment would be needed.

This emission unit is subject to several federal regulations, as described in the regulatory analysis section of this report. The MATS requirements will be addressed in the FG-MATS section of this report. The provisions of NSPS 40 CFR Part 60 Subpart Da are written into the permit. The facility also complies with the Acid Rain permit, associated with the ROP, CSPAR Subparts AAAAA, EEEEE, and CCCCC.

This emission unit is limited to 0.03 lbs/MMBTU heat input for PM, as verifiable through stack testing. The most recent stack testing results, from July 2019 had an emission rate of 0.0027 lbs/MMBTU for PM. The unit has SO₂ emission limits of 0.84 lbs/MMBTU heat input when firing coal, based upon a 30-day rolling average of successive boiler operating days, and a SO₂ limit of 0.80 lbs/MMBTU when firing oil, based upon a 24-hour average. J.B. Sims uses a continuous emissions monitoring system (CEMS) to monitor SO₂ emissions. Records indicate a 30-day rolling average of 0.221 lbs/MMBTU SO₂. SO₂ is also limited to 10% of the potential combustion concentration, unless the overall emission rate is less than 0.60 lbs/MMBTU in which case the emission rate shall not exceed 30% of the potential combustion concentration, based upon a 30-day rolling average of successive operating days. At the time of the inspection, the SO₂ CEMS was reading SO₂ emissions of 0.287 lbs/MMBTU. The average SO₂ removal is 97.3%.

NO_x emissions from the unit are limited to 0.60 lbs/MMBTU per heat input, based upon a 30-day rolling average of successive boiler operating days. Records indicate, the 30-day rolling average is 0.0333 lbs/MMBTU. At the time of the inspection the NOx CEMs was reading at 0.279 lbs/MMBTU. Opacity from the boiler is limited to 20%, per 6-minute period, except for one 6-minute period of not more than 27%. At the time of the inspection, KD noted the plume was detached, white, and indicative that large amounts of steam were present in the plume. The continuous opacity monitoring system (COMS) was reading an opacity of 1.74%. The sulfur-in-coal content is limited to 4.73% based on a heating value of 10,700 btu/lb., based on a 24-hour average. J.B. Sims receives a sulfur content analysis with every boat of coal it receives. The most recent boat that was received in November 2018 had a sulfur content of 2.54% on dry basis, and 2.40% as received.

The facility has a malfunction abatement plan (MAP) and is following it appropriately.

This emission unit is also subject to the CAM requirements, for PM. The facility has been appropriately submitting the required quarterly excess emission reports, and CAM compliance reports. No excess emissions were reported during the last four (4) quarters. The COMS is used as an indicator of the proper functioning of the ESP, for CAM compliance. The opacity reading of 1.68% indicates the ESP is properly operating.

The facility is also maintaining records for the lime scrubber associated with the unit, including the differential pressure, the water feed rate, and the pH, among other parameters. On the day of the inspection the pH was 5.61 and the slurry flow as 27.45 gallons per minute (gpm).

Recordkeeping, pursuant to 40 CFR 52.21(r)(6)(i), ends with 2018 records. The facility has not had any significant projects that would result in a significant increase in emissions, as defined in 52.21(r)(6)(i).

EU-AUXBOILER

This emission unit is for a 21 MMBtu/hr natural gas fired boiler. This unit is exempt from Rule 201 permitting under Rule 282(2)(b)(i), but since it is an existing natural gas fired boiler at a major source of HAPS, it is subject to the provisions of 40 CFR Part 63 Subpart DDDDD for industrial, commercial, and institutional boilers and process heaters. The initial notification was received on February 23, 2005. The boiler was not operating at the time of the inspection. The facility does regular maintenance, and the most recent Tune-Up and Annual compliance report was received by AQD on November 14, 2018; however, Mr. Cederquist indicated that he has the boiler scheduled for a tune-up later in the November 2019.

FG-MATS

This flexible group incorporate the requirements of 40 CFR Part 63 Subpart UUUUU, the Mercury and Air Toxics Standards (MATS). The requirements are only for EU-UNIT-3_BLR. The facility has chosen to demonstrate compliance with the particulate matter (PM) and hydrochloric acid (HCl) via quarterly stack testing, and the mercury limits via an annual stack test.

The facility most recently conducted stack testing for PM during the Second Quarter of 2019; the facility was conducting its make-up testing for HCl. The facility is planning to conduct the required third quarter testing yet during this quarter. The 30-day Mercury test was most recently completed in June and July 2018 and was getting underway for 2019 the week following KD and SE's visit. Since the required HCl test was missed in the second quarter, the facility must re-test during the next test period if the boiler operates for 168 hours or more, and must be at least 15 calendar days apart as per 40 cfr 63.10006(f)(3).

Test results for these compounds indicated a PM emission rate of 0.0027 lb./mmBTU and an HCl emission rate of 0.0000638lb./mmBTU. Both emission rates are compliant with the limits of 0.030 lb./mmBTU for PM, and 0.0020 lb./mmBTU for HCl. The facility had been trying for low emitting electric generating unit (LEE) status for both pollutants. The LEE requirements are 50% of the aforementioned limits and must be demonstrated for three (3) consecutive years. The third (3rd) quarter 2017 stack test for HCl did not achieve LEE status, thus the three (3) years must start over. Three years of data for PM has not yet been collected. Mercury from EU-UNIT-3_BLR is limited to 1.2 lb./Tbtu. The 2018 30-day Mercury stack test indicated an emission rate of 0.762 lb./Tbtu and 0.00260 lb./GWh. In order to be LEE for mercury, the emission rate must be less than 10% of the applicable mercury emission limit or potential mass emission of 29.0 or fewer pounds per year. The stack test indicated annual emissions which can be considered LEE, and only require the annual stack test.

Sims is following the provisions outlined in 40 CFR Part 63 Subpart UUUUU 63.10006 (f)(3)(i). J.B. Sims conducted their boiler tune-up during this time. The facility tracks all start-ups and shutdowns, and accounts for all monitor downtime appropriately. The facility submitted the initial notification on August 17, 2012 and has been submitting regular compliance reports since promulgation of the rule. The facility is also properly submitting to CEDRI.

FC-CIRICEMACT

This flexible group covers one (1) emergency stationary compression ignition reciprocating internal combustion engine. This engine is a Certified diesel fired emergency engine which is exempt from Rule 201 permitting under Rule 285(2)(g), but is subject to NSPS IIII, and NESHAP ZZZZ. Compliance with ZZZ is demonstrated via compliance with IIII.

The EPA Certification of the engine verifies compliance with the emission limitations of 9.2 g/kW-hr for NOx, 1.3

g/kW-hr for HC, 9.2 g/kW-hr for CO, and 0.54 g/kW-hr for PM. Per Mr. Cederquist, this engine is only runs for testing purposes. It is properly equipped with an hour meter and per the attached records, the engine has operated a total of 104.4 hours, as of November 11, 2019. A combined 13.8 hours during the 2019 calendar year, thus far.

FG-RULE290

The facility maintains this flexible group in the event that they install a unit that meets the requirements, but as of the inspection, there are no emission units in this flexible group.

FG-PARTSCLEANERS

The facility currently has two (2) cold cleaners located on site, which are exempt from Rule 201 permitting pursuant to Rule 281(2)(h) and were both closed. Neither are heated or agitated, and use a Stoddard solvent, which is not halogenated and meets the vapor pressure requirement of the exemption.

Compliance Determination

Based upon the observations made during the inspection and a subsequent review of the records, it appears that Grand Haven Board of Light and Power – J.B. Sims Generating Station is in compliance with MI-ROP-B1976-2018.

NAME

Paul M. Dule

DATE

11/13/2019

SUPERVISOR

[Signature]