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

B197635643

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:** 07/21/2016
STAFF: Steve Lachance	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Unannounced, Scheduled Inspection for FY '016 FCE. See CA_B197635643. (SLachance, 7/21/16)		
RESOLVED COMPLAINTS:		

On Thursday, July 21, 2016, SL conducted an unannounced, scheduled inspection of the Grand Haven Board of Light and Power, JB Sims Generating Station located at 1231 Third Street, Grand Haven, Michigan. SL was accompanied by AS of this office. The purpose of the inspection was to determine the facility's compliance with Renewable Operating (RO) Permit No. MI-ROP-B1976-2011 and other applicable air use requirements. (See specific discussions below.) The facility was represented by Mr. Paul Cederquist (environmental issues contact; 616-842-6355, extension 1292) and various other site personnel during the on-site inspection.

Note, this Full Compliance Evaluation (FCE) incorporates the on-site field activities of July 21, 2016 as well as assessment of all received reports and site observations in the last year. See the attached FCE cover sheet for documentation of these activities and reference to activity details.

FACILITY DESCRIPTION

The facility is an electricity generating station, where pulverized coal is the primary fuel. One unit, No. 3, is in use, producing up to 80 megawatts (MW; gross) per hour. Current operations are typically less however, due to decreased area electrical demand and equipment reliability; current plans are for steady operation at about 55 MW. This particular day was hazy, hot and humid, and so electric demand was "high".

The facility is located on the Grand River near the developed waterfront of Grand Haven, Ottawa County. A city marina/pier is located directly south of the facility.

Unit 3 was installed about 1983 and Units 1 and 2 were retired in 1989. Emissions from Unit 3 are controlled by low-NOx burners, a four-field electrostatic precipitator, a wet lime/limestone scrubber, and a Selective Non-Catalytic Reduction (SNCR) system for control of oxides of nitrogen. The facility has Continuous Emission Monitoring Systems (CEMS) installed for gas flow, sulfur dioxide (inlet and outlet), carbon dioxide, nitrogen oxides and opacity.

Other emission sources at the facility include fuel handling equipment, a backup natural gas-fired auxiliary boiler, a small emergency gen-set, a cold cleaner and miscellaneous maintenance painting activities.

The stationary source is located in Ottawa County, which is currently designated as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations, Part 70, because the potential to emit both sulfur dioxide and nitrogen oxides exceeds 100 tons per year.

The stationary source is also considered a major source of Hazardous Air Pollutant (HAP) emissions because the potential to emit of a single HAP regulated by the federal Clean Air Act, Section 112 (HCl) is greater than 10 tons per year.

The stationary source is subject to Prevention of Significant Deterioration (PSD) of Title 40 of the Code of Federal Regulations, Part 52.21, because its potential to emit of sulfur dioxide and nitrogen oxides is greater than 100 tons per year. However, the most recent permitted modifications at this stationary source were not subject to PSD regulations, based on the facility's on-going demonstrations that resulting increases in emissions were not greater than significant levels. Future modifications of the process equipment at this stationary source may be subject to the PSD requirements for pollutants for which Ottawa County is in attainment.

The stationary source is subject to the New Source Performance Standards for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978, promulgated in Title 40 of the Code of Federal Regulations, Part 60, Subparts A and Da.

The stationary source has an emission unit (EU-UNIT-3_BLR) subject to the federal Acid Rain program promulgated in Title 40 of the Code of Federal Regulations, Part 72.

The stationary source is subject to the federal Compliance Assurance Monitoring (CAM) rule under Title 40 of the Code of Federal Regulations, Part 64, because EU-UNIT-3_BLR has both a control device and potential pre-control emissions of particulate matter (PM) greater than the major source threshold level. CAM requirements are included in the ROP. Other emission limits for EU-UNIT-3_BLR are not subject to CAM because the emission limitations or standards meet the CAM exemption of Acid Rain monitoring requirements.

The Cross State Air Pollution Rule (CSAPR) is now finalized, but the Clean Air Interstate Rule (CAIR) is still in place. CAIR permits were issued to the site as part of the last RO permit renewal; CAIR supplanted former Part 8 permit requirements. Implementation of CSAPR will supplant CAIR; CSAPR requirements will be incorporated into the renewed ROP.

Coal-fired Unit 3 is subject to the Mercury and Air Toxics Standard (MATS), 40 CFR 63 Subpart UUUUU. This rule had a compliance date of April 16, 2016 (allowing for the one-year extension for compliance granted to the source); complete compliance demonstrations are due by October 13, 2016.

COMPLIANCE EVALUATION

The current ROP contains tables of applicable requirements for the following emission units: EU-MTL_HNDLING for handling coal, lime and ash; EU-UNIT-3_BLR for the coal-fired boiler; FGRULE290 for small, maintenance-related activities; and FG-PARTCLEANERS for multiple cold cleaners.

The field portion of the evaluation was completed on July 21, 2016. Weather conditions were hazy, hot and humid, about 75-80 degrees F, with increasingly brisk SSW winds of over 10 mph. Stack emissions of 0% opacity (all 0% instantaneous values; no steam plume present) were documented earlier in the day prior to site entry.

SL and AS arrived on-site at about 9:15 AM, EDT. A large pile of "new", partially unleveled

coal was evident. Site conditions were dry based on low recent precipitation. The on-site compliance evaluation on July 21, 2016, began with an entrance interview with Mr. Paul Cederquist. Specific items discussed included:

***SL provided Mr. Cederquist with the DEQ "Environmental Inspections Rights and Responsibilities" brochure and announced his intention to conduct an Air Quality Inspection.

***Mr. Cederquist reported no current operational issues with Renewable Operating Permit No. MI-ROP-B1976-2011.

***Mr. Cederquist reported no operational/on-site conditions that would preclude/affect inspection abilities/access/findings at this time.

***Full-time use of the SNCR is not required currently to meet applicable federal NOx standards (with the current CAIR permits/CSAPR requirements and allocated NOx allowances), and SNCR equipment is not in current use; but available NOx allowances/credits are getting scarcer and so the equipment was being prepped for use at anticipated high loads for the near term.

***SL initially requested the following records (which were compiled before leaving site and which are discussed below):

---Current CEMS Calibration Reports (July 21. 2016)
---Opacity Matrix for July 20 and 21, 2016
--- NOx/SOx Reports (hourly, in the units of the standards) for July 20 and 21, 2016
---Records of fuel quality (as analyzed from a monthly composite sample)
---Records of dust mitigation actions and observations during recent coal barge unloading

***Relative Accuracy Test Audit (RATA) of required CEMS was successfully completed a few weeks ago; final report pending.

***The Mercury and Air Toxics Standards (MATS; 40 CFR 63 Subpart UUUUU) was discussed in general terms. This is a coal fired unit not utilizing low-rank, virgin coal; the compliance date (extended by one year) was April 16, 2016; and the initial compliance demonstration is due by October 13, 2016. To date, the facility has completed (and passed) mercury testing; has conducted a 30-day sorbtion test for mercury to establish Low-Emitting EGU (LEE) Status; and has completed HCl and PM testing (reportedly passed, but reports not finalized; but draft reports provided; see attached.)

	DRAFT Result	MATS	DRAFT Result	MATS
PM	0.009	0.03 #/mmmBtu	0.116	0.3 #/MWH
HCl	0.00056	0.002 #/mmBtu	0.00701	0.02 #/MWH

***SL further discussed fugitive dust issues with Mr. Cederquist throughout the day's activities. As noted during the inspection, ash and gypsum storage areas were in generally acceptable shape, as on-ground materials are being minimized in these areas, the facility uses a city-owned sweeping/vacuum truck, and the city has purchased a large watering truck for convenient use, as needed.

***Multiple parts cleaners are still in use, with the same (stoddard) solvent as noted in previous inspections.

***Boiler_4 (black-start/emergency use) is fired by natural gas only and so has no Boiler MACT emission limits/testing requirements per 40 CFR 63, Subpart DDDDD. This unit is, however, subject to Energy Assessment and tune-up requirements per this rule; compliance date is 1/31/16. SL requested and viewed these reports; the unit's combustion was found to be in good order and no changes were implemented. The report was prepared by SS Combustion and Steam, dated 3-16-16.

***The facility has installed a small, diesel-fired emergency gen-set, but at 250 kW, the engine is small enough to qualify for exemption through Rule 285(g). The resulting RICE requirements (NSPS/NESHAP) will be handled via the application for renewal of the ROP.

***The most recent outage was unscheduled; about a month ago; to address a tube leak. SL will continue to assess each quarterly report for excess emissions, to monitor boiler operations and emissions to see if this/similar work does indeed result in significant increases in emissions.

EU-MTL_HNDLG

This emission unit consists of coal, lime, and ash material handling processes. Specific points are controlled by enclosures, bag houses, and wet dust suppression. Periodic monitoring for visible emissions, required maintenance, and implementation of the Fugitive Dust Plan provide the basis for compliance. General strategies for fugitive dust control include wetting materials; road scraping with a front-end loader; and sweeping of paved areas. SL noted the new addition of sprinkler heads/irrigation on coal conveyors.

Both of the ash and gypsum handling areas appeared to be in acceptable condition. There were no ash loading operations taking place at this time. Fugitive emissions from this operation are controlled by ash moisture and drop height. SL observed front-end loading of a truck with gypsum; and this generated no visible fugitive emissions. The gypsum appears to be inherently tacky/not dusty.

All requested records were either posted in place (dust collector evaluations, etc.) or readily available, including those required by the Environmental Inspection program outlined in Appendix 3.1 of the RO Permit. Required "Coal Boat Unloading Procedures" for 2016 (six shipments) were reviewed and dust control measures properly documented. Drop distances have been minimized, water suppression has been utilized, wind conditions considered and visible emissions (none) assessed.

EU-UNIT-3_BLR

This is a pulverized coal-fired boiler rated at approximately 78-80 megawatts (gross). Emissions are controlled by a wet lime scrubber, a 4-field electrostatic precipitator (ESP), low-NOx burners and (when in use), a SNCR system. The emission unit is subject to emission limits for the following pollutants (basis for compliance presented in parentheses): particulate matter (periodic stack test); sulfur dioxide (inlet and outlet CEMS); nitrogen oxides

(CEMS); and opacity (COMS).

The most recent ROP-required stack test was completed in November 2015, with results approximating 0.009 lb/mmBtu, compared to the allowable limit of 0.03 lb/mmBtu. The unit is subject to CAM based on COMS. A CAM excursion is defined as 20% opacity for two continuous hours (the same as for Rule 912 reporting.) Appropriate reports have been submitted, and CAM for this unit appears to be properly implemented.

Review of the Opacity Matrix for the day of inspection and the preceding observed day of operation (July 20 and 21, 2016) indicated a single 6-minute period of 12% opacity, with all other periods less than 6% opacity. See attached Average Data Opacity Tables. Note that opacity recordings for July 21 correspond well to observed visible emissions readings (noting one-hour difference in local and CEMS time.)

The following operating data was collected from the Unit 3 Control Room at about 10:00 AM. Operator "Newman" assisted. Since the day's CEMS Calibration Reports showed that each system passed calibration (see attached), and the required QA (RATA; quarterly CGA and linearity tests) have been documented; each CEMS value reviewed is accepted as valid.

0.7% Opacity
67% Coal Feeding Capacity (all three mills; Appalachian coal)
65.6 MW (net) production

0.14 #SOx/mmBtu outlet
51 ppm SOx outlet
1616 ppm #SOx/mmBtu inlet
(About 96.8% SOx reduction; reduction requirements are based on 30-day rolling averages and so momentary swings are not problematic.)

0.29 #NOx/mmBtu

In the CEMS Shelter, SL requested hourly Summary Reports of NOx/SOx emissions for this date (partial) and July 20, 2016 (attached); these appear to be consistent with observations in the Control Room.

In the Scrubber Control Room, SL documented logs of required Silo Dust Collector Visible Emissions Observations (none noted) and differential pressure; and noted monitoring for slurry density, pH and differential pressure. Each parameter was "steady" while CEMS documented proper operation of the scrubber through final emissions and SOx reduction.

SL requested and received documentation of fuel, as required by Appendix 3. See attached Analysis Reports for June 23, 2016 from Mineral Labs, Inc. This, in conjunction with CEMS and documented scrubber efficiencies, indicate compliance with sulfur-in-fuel and SO2 emissions limits. Specifically, these indicate a combined lower sulfur content and higher heating value for sulfur than required by permit; and CEMS document final SOx emissions and scrubber efficiencies.

SL reviewed Unit-3 emissions as reported to MAERS for EI2015. See attached. Reported emissions are below the levels required to demonstrate "no significant increase" in emissions from the boiler per the recordkeeping requirements from the last permitting.

	Established Baseline	EI2015 Reported	Significant Increase?
PM	117	26	No
SOx	684	295	No
NOx	785	323	No

Additional Note; in addition to on-site personnel observations of yard conditions, the Boiler Control Room Operator assesses conditions via camera surveillance. The Boiler Control Room Operator can initiate dust control actions based on these observations. Weather conditions are also assessed here through internet weather services.

FG-RULE-290

This regulates any existing or future emission unit that emits air contaminants that are exempt from permitting pursuant to Rule 290. The facility maintains records of maintenance spray painting (architectural and machine parts), and these emissions (minor) are included in MAERS reports. These indicate compliance with the monthly limits of Rule 290 on an annual basis.

FG-PARTSCLEANERS

These requirements apply to cold cleaners that are exempt from permitting and which are not subject to the Halogenated Solvent Cleaner MACT Standard. There are currently two units in service, using stoddard solvent. In a previous inspection, it was determined that this was an appropriate solvent, based on the MSDS which indicated that the vapor pressure is well below that allowed by the rule. Neither machine uses heated solvent or agitation. One machine was observed during the inspection; it was closed while not in use and operating instructions were posted by the machine.

Emergency Gen-Set

SL attempted to view the hour meter for this new installation (requirements are being added to the renewed ROP), but the meter was too high to effectively view. Mr. Cederquist attempted to access hours through a control panel on the Unit 3 second floor, but was unsuccessful; the maintenance personnel/operator in charge of this equipment reported no operations other than testing and 9.9 hours on the meter. This is in accordance with a new, emergency installation and serves as a baseline for future inspections.

EVALUATION SUMMARY

SL considers the facility to be in compliance with applicable air regulations at the time of the completion of this evaluation; SL indicated "no known issues" to Mr. Cederquist prior to departing from the site. SL will continue to monitor facility emissions through quarterly reports and MAERS to assess the impact on emissions of boiler maintenance activities and changed operational plans.

ATTACHMENTS:

1 *Prelim/Draft MATS Reports (HCl and PM)*
2 *Opacity Records for July 20 and July 21 (partial), 2016*
3 *Calibration Details for July 21, 2016*
4 *NOx/SOx Hourly Reports for July 20 and July 21 (partial), 2016*
5 *Coal Quality Report*
6 *EI2015 MAERS; Unit 3 Total Emissions*

NAME _____ DATE 7/25/16 SUPERVISOR _____