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

B197630279

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:** 07/20/2015
STAFF: Steve Lachance	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: FCE for FY '015.		
RESOLVED COMPLAINTS:		

On Monday, July 20, 2015, 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 KD 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. (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 incorporates the on-site field activities of July 20, 2015 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. 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 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 also a major source for Green-Houses Gases (GHGs.)

The stationary source is subject to Prevention of Significant Deterioration (PSD) of Title 40 of the Code of Federal Regulations, Part 52.21, regulations because its potential to emit of sulfur dioxide and nitrogen oxides is greater than 100 tons per year. However, 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.

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 20, 2015. Weather conditions were clear, with low humidity, about 70-75 degrees F, with increasingly brisk WSW winds of over 10 mph. Stack emissions of 1% opacity (0-5% instantaneous values; no steam plume present; maximum 6-minute average of about %1 opacity) were documented earlier in the day prior to site entry. The Visible Emission Observation Form for these readings is attached.

SL and KD arrived on-site at about 10:30 AM, EDT. A large pile of "new", unleveled coal was evident. Site conditions were moist/wet based on abundant precipitation over the previous weekend. The on-site compliance evaluation on July 20, 2015, 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.

***SL reported receipt of the recent complaint from a Grand Isle Marina user alleging fallout from the facility; and general findings of the morning's investigations there; no actionable issues noted at this 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.

***SL initially requested the following records (which were compiled before leaving site and which are discussed below):
---Current CEMS Calibration Reports
---CEMS Calibration Report for March 20, 2015; a quasi-random day on which SL had noted site operations
---Opacity Matrix for March 20 and July 20, 2015
---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 currently underway (Lemos Labs, LLC) and required PM testing per ROP was scheduled for later in the week. Results from the last PM test were 0.002 #PM/mmBtu heat input (6.7% of the allowed limit of 0.03 #PM/mmBtu heat input).

***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. SL also confirmed with Mr. Cederquist that facility personnel observe boats utilizing required unloading procedures (wetting, minimized drop distances, observance of weather conditions, etc.) SL received a copy of the most recent Fugitive Dust Control Plan (attached.)

***Mr. Cederquist maintains weekly contact and surveillance of conditions at the adjacent marina; AQD has received no recent complaints from this group.

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

***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.

***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). This late in the permitting cycle,

the resulting RICE requirements (NSPS/NESHAP) will be handled via the application for renewal of the ROP.

***The most recent scheduled outage (primarily addressing generator issues) involved replacing boiler tubes in a "good portion" of the back wall. This was further characterized as "routine for the industry"; as the contractor, Northern Boiler does this all the time; and the affected area "bigger than a soccer net." (Last year the affected area was "smaller than a hockey net.") SL discussed the implications of such "routine maintenance" and while the project was aimed at gains in efficiency, they could result in increased emissions. SL will monitor boiler operations and emissions to see if this 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.

Both of the ash and gypsum handling areas appeared to be in acceptable condition.

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" (attached for the last two coal shipments) have been properly documented. Drop distancves have been minimized, water suppression has been used, wind conditions considered and visible emissions (none) assessed.

EU-UNIT-3_BLR

This is a pulverized coal-fired boiler rated at approximately 78-80 megawatt (gross). Emissions are controlled by a wet lime scrubber, 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 stack test was completed in 2010, with results approximating 6.7% of allowed levels. Testing was attempted during the week of this inspection, but not with the correct manner; Lemos Labs will be on-site later in the year to properly notify and test using Method 5B in order to fulfill the requirement for this year. The Unit is subject to CAM Based on COMS. 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 (March 20, 2015) indicated less than 2% opacity for each 6-minute period. See attached Average Data Opacity Tables for July 20 (partial) and March 20, 2015. Note that

opacity recordings for July 20 correspond well to observed visible emissions readings. The following operating data was collected from the Unit 3 Control Room at about 11:20 AM. Operator "Dan" assisted. Since the day's CEMS Calibration Reports that each system passed calibration (see attached), each CEMS value reviewed is accepted as valid.

2% Opacity
63-68% Coal Feeding Capacity (all mills)
56 MW (gross) production

0.65 #SOx/mmBtu outlet
5 #SOx/mmBtu inlet
(About 87% SOx reduction; but increasing; had just switched scrubber modules. Reduction requirements are based on 30-day rolling averages and so momentary swings are not problematic. Discussions with operators and Maintenance Supervisor Mike Kellogg indicated that required Scrubber Operations Procedures are integrated into site operations.)

0.30 #NOx/mmBtu

In the CEMS Shelter, SL and KD met Technician Mr. Chris Morse. SL requested hourly Summary Reports of NOx/SOx emissions for this date (partial) and March 20, 2015 (attached); these appear to be consistent with observations in the Control Room and with the previously submitted quarterly report for Q1 2015. Discussions of the ongoing RATA ensued, including observing the Lemos trailer and meeting Mr. Trevor Block; the rest of the Lemos crew was in the stack and the Flow RATA was underway. Subsequent RATA/test observations were completed by Mr. Jeremy Howe on behalf of AQD-TPU.

SL requested and received documentation of fuel, as required by Appendix 3. See attached Analysis Reports for March 23, 2015 and associated "Quality as Received" report. These records, 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.

Note that 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 2 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.

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 MAERS to assess the impact on emissions of boiler maintenance activities and changed operational plans.

ATTACHMENTS:

A Visible Emissions Observation Form for July 20, 2015

B Fugitive Dust Control SOP

C Coal Boat Unloading Procedures

D Opacity Records for March 20 and July 20 (partial), 2015

E Calibration Details for March 20 and July 20, 2015

F NOx/SOx Hourly Reports for March 20 and July 20 (partial), 2015

G Coal Quality Reports (30-day Composite and Shipment Quality)

NAME  DATE 7/24/15 SUPERVISOR