

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

B283530996

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| FACILITY: J. H. Campbell Plant | | SRN / ID: B2835 |
| LOCATION: 17000 Croswell, WEST OLIVE | | DISTRICT: Grand Rapids |
| CITY: WEST OLIVE | | COUNTY: OTTAWA |
| CONTACT: JOE FIRLIT , AQD CONTACT | | ACTIVITY DATE: 09/03/2015 |
| STAFF: Steve Lachance | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: Scheduled Inspection for FY '015 with emphasis on Consent Decree Requirements and Unit 2; see CA_B283530996. | | |
| RESOLVED COMPLAINTS: | | |

On September 3, 2015, SL conducted a scheduled inspection of the Consumers Energy, JH Campbell coal-fired electricity generation facility located at 17000 Croswell, Port Sheldon, Michigan. Although SL's on-site presence was anticipated for review of scheduled COMS audit activities, the inspection itself was unannounced. The purpose of the AQD inspection was to determine the facility's compliance with Renewable Operating Permit (ROP) No. MI-ROP-B2835-2013; Permit to Install (PTI) No. 141-12 (for a new emergency diesel generator for Units 1 and 2;) PTI No. 18-15 for modifications to the facility's Air Pollution Control Plan; and PTI No. 39-15 that incorporates requirements of a fleet-wide federal Consent Decree.

The facility was represented by Mr. Joe Firlit (Site Contact for AQD) and Ms. Katie Cunningham (Consumers/Jackson Office; Single Point of Contact "SPoC" for this facility) throughout the inspection. Ms. Staci LeFurge (JFirlit's boss) was present for the entrance interview/discussions. Mr. Mike Rabideau (Units 1 and 2 CEMS) generally assisted and supported the day's activities. Various other Consumers Energy technical representatives and operators also participated at certain points in the inspection.

Source Description and Regulatory Summary

The facility is an electricity generating station, where pulverized coal is the primary fuel. Three units, No's. 1, 2 and 3, are in use, producing approximately 1,450 megawatts (net) per hour. The facility is located along the northern shore of Pigeon Lake, adjacent to Lake Michigan in Port Sheldon Township, Ottawa County. Although most of the land in the general area of the facility is lightly populated, dense developments of both seasonal and year-round homes are located immediately west of the facility (between the plant and Lake Michigan) and south of the facility across Pigeon Lake.

The three units were installed in 1958, 1963 and 1974. Boiler emissions are controlled through the use of blended western coal, flue gas conditioning systems (as necessary), electrostatic precipitators and low-NOx burners. Emissions of nitrogen oxides from Units 2 and 3 are controlled by a Selective Catalytic Reduction (SCR) systems; and the Unit 2 ESP has been removed and replaced with a Pulse Jet Fabric Filter (PJFF.) The facility has Continuous Emission Monitoring (CEM) Systems installed for gas flow, sulfur dioxide, carbon dioxide, nitrogen oxides and opacity for each unit.

The facility has been permitted to install additional pollution control equipment (fabric filters, carbon injection, spray drier absorbers) at each of the units. This work commenced in early 2011 and is continuing; current construction includes the Unit 1

PJFF, Units 1 and 2 Dry Sorbent Injection (DSI), Unit 3 PJFF and SDA, Ash Silo C and tie-ins to existing systems.

Other emission sources at the facility include a dry ash handling system; a wet bottom ash handling system; fuel handling equipment; back-up auxiliary boiler(s) and diesel generators; and cold parts cleaners.

Section 2 of the facility's application is comprised of a back-up, 233 mmBtu/hr distillate oil-fired combustion turbine which has been registered as "mothball status" to Midwest Independent System Operators as of August 2011.

Control of fugitive dust has historically been of interest to the community (although no complaints have been received this inspection year), and the facility has implemented a site-wide fugitive dust control program. Reports of Fugitive Dust Control measures are submitted on a quarterly basis.

The stationary source is located in Ottawa County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit several criteria pollutants (NO_x, SO_x, CO, PM and VOC) exceeds 100 tons per year and the potential to emit of any single HAP regulated by the federal Clean Air Act (HCl), Section 112, is equal to or more than 10 tons per year and the potential to emit of all HAPs combined is more than 25 tons per year. Additionally, the potential to emit of Greenhouse Gases is 100,000 tons per year or more calculated as CO₂e and 100 tons per year or more on a mass basis.

At the time of the original New Source Review permit issuance, the facility's Unit 3 was considered a major source in regards to Prevention of Significant Deterioration (PSD) (40 CFR 52) regulations since the facility has the potential to emit of several criteria pollutants exceeding 250 tons. As such, emission limits for Unit 3 were established pursuant to Best Available Control Technology (BACT). Other units at the stationary source were not subject to PSD regulations because the process equipment was constructed/installed prior to the promulgation of the PSD regulations.

As part of pollution control and energy enhancement projects for Unit 3, the stationary source previously accepted legally enforceable permit conditions limiting the potential to emit of particulate matter, sulfur dioxide and oxides of nitrogen to below "major modification" levels. The stationary source has reporting requirements to demonstrate that no significant increase in net emissions has occurred as a result of these projects. The monitoring period for the reporting ended in May of 2012.

Recent permitting of air pollution control equipment for each of the boilers (Permit to Install No. 179-10) involved a hybrid test under PSD per Rule 1802(4)(e) to demonstrate that the project will not cause a significant emissions increase, and therefore, PSD was not triggered by this project. Consumers Energy pursued state permitting for the

material handling equipment and to memorialize the non-PSD determination for the boilers.

At this time, there are no GHG applicable requirements to include in the ROP. The mandatory Greenhouse Gas Reporting Rule under 40 CFR 98 is not an ROP applicable requirement and is not included in the ROP.

The facility's Unit 3 is subject to the New Source Performance Standards (NSPS) for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971 (NSPS; 40 CFR 60, Subparts A and D). Monitoring requirements for Sulfur Dioxide from this unit pursuant to 40 CFR 60, Subpart D are addressed through compliance with certification of Continuous Emissions Monitoring Systems (CEMS) per Title IV (Acid Rain), 40 CFR Part 75 regulations.

Two "granulator" coal crushers were installed in the Breaker House in 2006. These pieces of equipment crush and re-size the coal for use further down the coal handling equipment line. Installation of the crushers on these systems triggered applicability of NSPS, Subpart Y (Standards of Performance for Coal Preparation and Processing Plants) for portions of the coal handling systems. This is based on date (after 1974); size (these coal systems handle >200 tons per day coal); and installation of a named affected facility (coal crusher). Required notifications and opacity tests (dust collectors 4, 5, 6, 7 and 9) have been completed; no visible emissions were noted during the initial performance tests and no further compliance testing is required based on the regulation at the time of applicability.

The facility is using CEMS to demonstrate compliance with Rule 401 emission limits for sulfur-bearing compounds for Units 1 and 2. Unit 3 is subject to the more stringent SO₂ emissions standards of 40 CFR 60, Subpart D; as noted above, CEMS are also utilized to demonstrate compliance with these emissions standards.

The facility is subject to the Acid Rain (Title IV) provisions of the Clean Air Act of 1990, as amended.

Each of the coal-fired boilers (Units 1, 2 and 3) are regulated by Michigan's Part 8 Rules ("Emission Limitations and Prohibitions – Oxides of Nitrogen"). Each is also subject to applicable federal NO_x and SO_x programs/permits.

Each of the coal-fired boilers (Units 1, 2 and 3) are regulated by Michigan's Part 15 Rules ("Emission Limitations and Prohibitions – Mercury"). The boilers are also defined as Electric Generating Units (EGUs) for the purposes of the federal Mercury and Air Toxics Standards (MATS); Michigan's Part 15 Rules will be rescinded upon finalization of equivalent or more stringent federal standards for mercury emissions. A one-year extension of the MATS compliance date (to April 2016) has been granted for each unit based on the ongoing installation of additional site controls.

The facility's cold cleaners are currently not subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for halogenated solvent cleaning operations, 40 CFR 63, Subpart T.

The diesel-powered reciprocating internal combustion engines (RICE) are used as a source of emergency backup power or water supply and FGEXISTINGRICE are subject to the National Emission Standards for Hazardous Air Pollutants from Stationary RICE, 40 CFR 63, Subpart ZZZZ. All units qualify as "emergency use" RICE, however while all other RICE will be subject to work practice standards, compliance reporting and recordkeeping as of May 3, 2013, EUCAT3DIESEL does not have to meet the requirements of this subpart. All RICE may be subject to initial notification and specific work practice requirements upon reconstruction of a unit. The facility is also required by the NESHAP to maintain records of the applicability determination for these units.

Auxiliary boilers for the coal-fired units (EUAUXBLRS12 and EUAUXBLR3b, EUAUXBLR3c) at the stationary source are subject to the Maximum Achievable Control Technology (MACT) standards under the National Emission Standard for Hazardous Air Pollutants for Major Sources for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR Part 63, Subpart DDDDD. Only EUAUXBLRS12 has emission limits per this rule; final compliance date is in 2016.

As an existing source, the stationary combustion turbine (EUCOMBTURB) in Section 2 is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR 63, Subpart YYYY, but does not have any applicable requirements. The turbine would have requirements if it were to be modified.

The stationary source is subject to the federal Compliance Assurance Monitoring (CAM) rule (40 CFR 64) because EUCOALHAND, EUBOILER1, EUBOILER2, and EUBOILER3 have both control devices and potential pre-control emissions of particulate greater than the major source threshold level. In addition, post-control emissions of particulate from EUBOILER1, EUBOILER2 and EUBOILER3 are over the major source threshold level. Each particulate control device is monitored; baghouse filters for material handling control points are assessed for visible emissions, and boiler electrostatic precipitators/fabric filters (ESPs/FFs) are continuously monitored for opacity using Continuous Opacity Monitoring Systems. CAM requirements are included in this ROP.

The emissions limitations or standards for SO₂ and NO_x from EUBOILER3 at the stationary source are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR, Part 64, because these are addressed by NSPS per 40 CFR Part 60, Subpart Da. Therefore, EUBOILER3 is exempt from CAM for SO₂ and NO_x.

Furthermore, the emissions limitations or standards for SO₂ and NO_x from each boiler at the stationary source (EUBOILER1, EUBOILER2, and EUBOILER3) are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR Part 64, because these meet the CAM exemption for Acid Rain monitoring requirements.

Therefore, EUBOILER1, EUBOILER2 and EUBOILER3 are exempt from CAM for SO₂ and NO_x.

Consumers Energy entered into a federal Consent Decree agreement in November 2014. Requirements of the Consent Decree are included in PTI No. 39-15 and are being rolled into the ROP. This Consent Decree affects the entire Consumers fleet of coal-

fired boilers; this inspection focused in part on currently applicable limits, monitoring and records required per this Decree.

COMPLIANCE EVALUATION

The Renewable Operating Permit (MI-ROP-B2835-2013; for which a citizens' petition was filed to EPA, but which EPA has not yet apparently acted upon) contains tables of applicable requirements for the following emission units and flexible groups: (Section 1); EUASHNEW; EUBOILER1; EUBOILER2; EUBOILER3; EUCOALHAND; EULIMEPREP; EUSDAMAT1&2; EUSDAMAT3; EUBYPRODUCT; EUAUXBLRS12; EUCAT3DIESEL; FGBOILER12 (consisting of common applicable requirements for EGBOILER1 and EGBOILER2); FGEXISTINGRICE for multiple internal combustion engines used for emergency power; FGPARTSCLEANERS for multiple cold cleaners; FGAUXBLRS3 for Boiler MACT requirements for two small, gas-fired boilers; and (Section 2); EUCOMBTURB. The facility is also subject to a source-wide fugitive dust control strategy, and the requirements of PTI No. 141-12 for a new emergency diesel gen-set (installed after the current ROP was "draft" and available for public comment); modifications to their Air Pollution Control Program per PTI No. 18-15; and the federal Consent Decree, as contained in PTI No. 39-15. These miscellaneous requirements have been included in an application for modification of the existing ROP; action pending.

The field portions of the evaluation were primarily completed on September 3, 2015. Weather conditions were mild and in the 70's. Visible emissions from the main boiler stack emission points were estimated prior to arriving on-site at about 9:20 AM as 0-5% Opacity. The inspection commenced with an entrance meeting with Ms. Cunningham and Mr. Firlit, as well as various managers and technical assistants, including:

- Ms. Staci Lefurge (Environmental Manager for the facility)
- Mr. Mike Rabideau (Units 1 and 2 CEMS)

SL received the following records that had been requested via e-mail the evening before, in anticipation of the inspection activities:

- Malfunction Abatement Plan (MAP) for the Pulse Jet Fabric Filter (PJFF) for Unit 2
- Records Demonstrating "Limited Use" categorization for EUAUXBLR12
- Records in support of current Consent Decree Emission Limits, including 30-day rolling averages for Units 1/2 SO_x; Unit 3 SO_x; and Unit 3 NO_x.
- Calibration Reports for Each CEMS for 9-3-15; and
- Opacity Matrix for each "Unit-Day" of PM Testing conducted earlier in the week.
- SL also asked for the opportunity to discuss "Optimization" of PM controls per Appendix 2-G of PTI No. 39-15.

See attached; each of these is discussed below, in the equipment-appropriate section of this narrative.

SL announced his intention to complete an inspection on this date; the inspection findings would include a review of all required, submitted reports and previous site activities since the last complete inspection (August 2014). SL shared and distributed the DEQ's "Environmental Rights and Responsibilities" brochure. SL also declared his intention to view certain equipment and review certain specific records required in support of the ROP and PTIs. See specific discussions below for each regulated unit. Specific points discussed during this entrance meeting included:

- No known technical/operational issues on this date. NOx CEMS on unit 3 "failed" initial calibration, but passed subsequent calibration this morning. A few hours of monitoring down-time were incurred. See the attached daily calibration reports. SL actually used this as an example whereby negative results reinforce the source's ability to appropriately respond and correct a situation, compared to simply "cruising" and not having to react to conditions.
- Unit 2 is reportedly running well on 60% western coal. This unit is equipped with a Pulse Jet Fabric Filter (PJFF) and SCR (installed and on-line). The ESP has been physically removed.
- Units 1 and 3 operate on 100% western coal.
- Per above, the requested CEMS calibrations for this date were received with no ongoing issues. Any CEMS observations for the day should be valid.
- Other requested reports were provided; no emissions issues for the reporting periods. See specific discussions, below.
- There have been no recent complaints to AQD and Ms. Lefurge planned to attend ~~the~~ attended the pre-Labor Day Mt. Beach Association meeting.
- Current construction includes Unit 1 PJFF and Dry Sorbent Injection (DSI) systems; the Unit 2 DSI system; and Unit 3 PJFF, SDA, and associated material handling equipment, etc.
- Silo C on the landfill should be ready in October.
- SL indicated his intention to inspect the facility w.r.t. November 2014's Consent Decree between Consumers and US EPA (as contained in PTI No. 39-15; some emission limits, monitoring and recordkeeping are in effect, now.)
- Sulfur-in-oil results from 2009's sample indicate compliance. The facility continues to specify (compliant) Ultra-Low Sulfur Diesel (ULSD) fuel at 15 ppm Sulfur or less.
- The facility received approval for extending compliance with 40 CFR 63, Subpart UUUUU (EGU MACT) for Units 1, 2 and 3 until April, 2016.

The group also discussed the "Optimization" language for PM control systems required in Appendix 2-G of PTI No. 39-15. Continued maintenance of the existing ESP (as documented by work orders, opacity performance, etc.) is key. Adherence to the Malfunction Abatement Plans for existing and future PM controls is required by permit. The term "Optimization" remains vague, but opacity performance is carefully monitored and evaluated, and the MAPs identify parameters to pay attention to and actions to take.

The inspection continued with equipment observations, accompanied by Mr. Firlit and Ms. Cunningham, and assisted by others.

"SECTION 1" REQUIREMENTS

EUASHNEW

This table outlines the applicable requirements for the "new" dry ash storage and handling equipment. Specific points on the ash handling lines are controlled with pulse jet baghouses. Ash is ultimately sold for use in asphalt/concrete products or

landfilled on Consumers' property across Lakeshore Drive.

Compliance with the particulate matter limits has been demonstrated through the monitoring of baghouse performance as required by the RO Permit's "Monitoring and Malfunction Abatement Plan for Dry Fly Ash Collection Systems" and CAM Plan. These plans and records were readily available.

***** operational parameters*****

The daily inspections required by the "JH Campbell Complex Fugitive Dust Control Program" and associated records were readily available.

***** design parameters*****

The equipment is designed as required by the RO Permit; and an additional, permitted silo is under construction. Material handling and ash handling were included in the APCP permitting efforts.

***** monitoring/recordkeeping*****

As noted above, records for the required inspections were available, and no additional issues were identified.

***** testing/recordkeeping/reporting*****

No emissions testing of this equipment has been specified, and no specific issues have been identified.

(This area was not intensively reviewed during this inspection based on familiarity with the equipment, previous site visit observations the previous month, and quarterly fugitive dust control reports.)

EUBOILER1

This table outlines the applicable requirements for Boiler 1. Emissions are controlled by an electrostatic precipitator (ESP), sulfur trioxide flue gas conditioning, and low-NOx burners. (Note, however, that SO3 flue gas conditioning is no longer necessary or used due to current (100% western) coal usage.) A PJFF is currently under construction. Other requirements are also examined below in FGBOILER12.

SL received and reviewed the CEMS/COMS/calibration records that had been requested (attached); no issues were noted; these indicate compliance for the time periods requested, and calibration information supports the validity of the values observed on this date.

***** material usage/emission limits*****

Compliance with the particulate matter and opacity limits is based on proper operation and maintenance of the equipment, in conjunction with information provided by the CEMS and COMs. See below, as well as FGBOILERS1&2. At the time of the inspection the following information was obtained from the Unit 1 Control Room:

- Opacity = 7%
- 272 net MW

- 100% western coal
- The current NOx emission rate was 0.147 pound per mmBtu heat input. This unit is also subject to a **future** 365-day rolling limit for NOx. This value was presented as 0.164 pound per mmBtu, compared to the limit of 0.220. (Note, the 365-day limit demonstration is still "under construction"; the unit has not operated for that period under the Decree.)
- The current SOx emission rate was 0.638 pound per mmBtu heat input, compared to 1.00 allowed by the Decree four Units 1/2 at this time. This unit will also be individually subject to **future**, lower 30-, and 90-day rolling limits for SOx when the CEMS and DSI controls are in final configuration.
- The sulfur trioxide flue gas conditioning system was not in use at the time of the inspection. Per the operator, the system is not necessary at the current fuel mix.

*** process/operational parameters***

Based on the above observations, in conjunction with CEMS and COMS information, both the sulfur flue gas conditioning system and the PM control devices appear to be utilized properly, given the opacity history of the unit.

*** testing***

Emissions testing for particulate matter was completed in Fall, 2014 in accordance with AQD requirements. The results indicate emissions of about 0.006 lb particulate matter per 1,000 pounds of exhaust gas, corrected to 50% excess air (Boilers 1 and 2 combined; this is about 4% of the allowable limit.) Future compliance testing is required with the Consent Decree and installation of the PJFF for this unit.

*** monitoring/recordkeeping***

As noted above, the following information was requested and received; current Daily/General Average Report and CEMS Daily Calibration Reports. See attached. No issues were noted for these periods; and each quarterly report is reviewed by AQD.

The CAM Plan for this unit utilizes the existing COMS system, and so is fully implemented.

stack/vent

There have been no changes to the unit's stack, which was apparently and reportedly constructed to the permit specifications.

other

The unit is subject to Acid Rain and federal NOx Budget permitting/CAIR programs. Acid Rain compliance demonstrations are reported directly to U.S. EPA on a quarterly basis.

While the boiler is regulated by Michigan's Part 8 Rules ("Emission Limitations and Prohibitions – Oxides of Nitrogen") and the applicable requirements are included in a NOx Budget Trading Permit, attached to the Renewable Operating Permit as Appendix 1-10, this permit is in effect superceded by current permits required by the Clean Air Interstate Rule (CAIR; 40 CFR Part 96, as implemented through Rules 420 and 821). The final Cross-State Air Pollution Control Rule may require additional future permitting action.

EUBOILER2

This table outlines the applicable requirements for the Boiler 2. Emissions are controlled by a new PJFF, replacing the existing ESP, sulfur trioxide flue gas conditioning, low-NOx burners, and Selective Catalytic Reduction (SCR) system. The SO3 system was not in use at this time.

SL received and reviewed the CEMS/COMS/calibration records that had been requested and as noted above. No issues were noted; these indicate compliance for the time periods requested, and calibration information supports the validity of the values observed in each control room on this date.

*** material usage/emission limits***

Compliance with the particulate matter and opacity limits is based on proper operation and maintenance of the equipment, in conjunction with information provided by the CEMS and COMs. See below, as well as FGBOILERS1&2. At the time of the inspection, the following information was obtained from the Unit 2 Control Room:

- Opacity = 8%
- 323 gross MW
 - 60% western coal
- The pulse jet fabric filter has 10 isolatable chambers and operates in continuous cycle mode. "Delta P" was about 6.5" over-all, and each cell is equipped with particle (bag leak) detectors. Inlet and outlet temps were within a few degrees and so there's no indication of leakage/air infiltration.
- SCR monitoring indicated < 1 ppm NH3 slip (per calculation); 33 ppm NOx (outlet) and 182 ppm NOx (inlet.) This represents about 82% NOx reduction.
- The current NOx emission rate was 0.037 pound per mmBtu heat input, compared to the allowed 30-day rolling limit of 0.100 pound per mmBtu; and the 90-day rolling limit of 0.080 pound per mmBtu.
- The current SOx emission rate was 0.638 pound per mmBtu heat input; this compares to the 1.00 pound per mmBtu allowed for combined Units 1/2. This unit is also subject to future, lower 30-, 90-, and 365-day rolling limits for SOx when the individual CEMS and DSI controls are in final configuration (April 2016.)

The sulfur trioxide flue gas conditioning system is reportedly no longer used.

*** process/operational parameters***

Based on reported CEMS and COMS results, both the sulfur flue gas conditioning system and the PM control equipment appear to be utilized properly, given the opacity history of the unit. The Unit Operator on duty reportedly loves the PJFF and looks forward to the installation of the Unit 1 PJFF.

The MAP for this unit's PJFF ([attached](#)) identifies 5 elements of malfunction prevention, detection, and abatement. These are:

- Increasing Opacity
- High "Delta P"
- Low "Delta P"
- Dust Detection
- Low Cleaning Pressure

Each of these was reviewed with the on-duty operator while the control screen was available; his understanding of the PJFF and the MAP was thorough.

*** testing***

Emissions testing for particulate matter was completed in Fall, 2014 in accordance with AQD requirements. The results indicate emissions of about 0.006 lb particulate matter per 1,000 pounds of exhaust gas, corrected to 50% excess air (Boilers 1 and 2 combined; this is about 4% of the allowable limit.)

Note performance testing had been completed earlier in the week pursuant to the Consent Decree. Consumers had not officially notified AQD of this test pursuant to Part 10 requirements. Upon inquiry, Ms. Cunningham showed that this requirement is in PTI No. 39-15, but is portrayed in such a manner that AQD notification is not implicated/clear. (Basically the requirement to test is simply appended to existing testing requirements and appears to be separate, as opposed to be included under the generally applicable Part 10 notification/procedure requirements.) This will be cleaned up with ROP modification applications in-house.

*** monitoring/recordkeeping***

The required records for sulfur trioxide flue gas conditioning were available, and no issues were identified. The CAM Plan for this unit utilizes the existing COMS system, and so is fully implemented. As noted above per Unit 1, the requested information was received.

No issues were noted; these indicate compliance for the time periods requested, and calibration information supports the validity of the values observed for this date.

*****stack/vent*****

There have been no changes to the unit's stack, which was apparently and reportedly constructed to the permit specifications.

*****other*****

The unit is subject to Acid Rain and NOx Budget permitting/CAIR programs. Acid Rain compliance demonstrations are reported directly to U.S. EPA on a quarterly basis.

While the boiler is regulated by Michigan's Part 8 Rules ("Emission Limitations and Prohibitions – Oxides of Nitrogen") and the applicable requirements are included in a NOx Budget Trading Permit, attached to the Renewable Operating Permit as Appendix 1-10, this permit is in effect superceded by current permits required by the Clean Air Interstate Rule (CAIR; 40 CFR Part 96, as implemented through Rules 420 and 821). The final Cross-State Air Pollution Control Rule may require additional future permitting action.

EUBOILER3

This table outlines the applicable requirements for the Boiler 3. Emissions are controlled by electrostatic precipitators (ESPs; two in series), low-NOx burners, and a Selective Catalytic Reduction (SCR) unit. PJFF and SDA controls are currently being installed.

SL received and reviewed the CEMS/COMS/calibration records that had been requested. No issues were noted; these indicate compliance for the time periods requested, and calibration information supports the validity of the values for this date.

***** material usage/emission limits*****

Compliance with the particulate matter and opacity limits is based on proper operation and maintenance of the equipment, in conjunction with information provided by the most recent stack test and COMs. Compliance with the NOx and SO2 limits is based on information supplied by the CEMS. At the time of the inspection (about 11:35 AM), the following information was obtained from the Unit 3 Control Room:

- Opacity = 3%
- 843 MW Gross Production (full out based on moving warm, humid combustion air)
- 789 MW Net Production
- 919,000 pph coal consumed
- about 0.027 #NOx/mmBtu; about 85% reduction
- w.r.t. Consent Decree/PTI No. 39-15, 0.036 pound NOx/mmBtu on a 30-day rolling average (limit of 0.70 on a 3-hour basis and 0.100 on a 30-day rolling average basis) and 0.040 pound NOx on a 90-day rolling average (limit of 0.08).
- Ammonia slip 5-6 ppm (per calculation)
- 0.488 #SO2/mmBtu; compared to 1.2 allowed per 3-hour period; 0.48 #/mmBtu for the past 30-day period; compared to current limit = 1.00 (subject to future reduction to 0.085 per Consent Decree/PTI No. 39-15); the unit will also subject to a **future** 365-day rolling limit for SOx.

- 100% western coal
- Sulfur injection rate = 0 pph

*****process/operational restrictions*****

The overall acceptable evaluation of the electrostatic precipitator is based on the opacity levels recorded.

***** design parameters*****

There have been no recent changes to these requirements or to the affected/regulated equipment; much construction on the future's Air Pollution Control equipment.

*****testing*****

Emissions testing for particulate matter was completed in 2014 in accordance with AQD requirements. The results indicate emissions of about 0.003 lb particulate matter per 1,000 pounds of exhaust gas, corrected to 50% excess air (this is about 3% of the allowable limit.) SL was on-site and observed PM testing of this unit on 8/5/14; all had proceeded normally.

***** monitoring/recordkeeping*****

All required records for CEMS, COMS, and ESP were available, and no issues were identified. No issues were noted for these periods; and each quarterly report is reviewed by AQD.

CAM for this unit is the existing COMS; and so CAM is fully implemented.

***** reporting*****

The facility has completed and submitted all necessary quarterly excess emissions and CEMS performance reports, as well as QA/QC documentation required for the CEMS based on Part 75 requirements.

*****stack/vent*****

There have been no changes to the unit's stack, which was apparently and reportedly constructed to the permit specifications. This currently has two ducts entering the stack; per consent decree the CEMS will monitor the combined duct-work (stack) in the future.

*****other*****

While the boiler is regulated by Michigan's Part 8 Rules ("Emission Limitations and Prohibitions – Oxides of Nitrogen") and the applicable requirements are included in a NOx Budget Trading Permit, attached to the Renewable Operating Permit as Appendix 1-10, this permit is in effect superceded by current permits required by the Clean Air Interstate Rule (CAIR; 40 CFR Part 96, as implemented through Rules 420 and 821). The final Cross-State Air Pollution Control Rule may require additional future permitting action.

EUACOALHAND

This table outlines the applicable requirements for the coal handling equipment. Specific points on the coal handling lines are controlled with pulse jet baghouses. Enclosures and wet dust suppression are also utilized.

No visible emissions were observed to be leaving the immediate vicinity of any coal handling activities.

***** material usage/emission limits*****

Compliance with the particulate matter limits has been demonstrated through the monitoring of baghouse performance as required by the RO Permit's "JH Campbell Complex Fugitive Dust Control Program" and CAM. No specific emissions testing of this equipment has been required.

***** design parameters*****

The equipment is designed as required by the RO Permit and the fugitive dust control program required there-in. Each of the baghouses is equipped with a pressure differential gauge; particle detectors; and a CO detector (due to the fire risk associated with the handling of western coal.)

***** monitoring/recordkeeping*****

CAM specifies "no visible emissions" and differential pressure ranges between 1 and 7 inches of water pressure. The recent modification to the permit was designed to clarify the meaning of excursion for this equipment, which is now defined specifically with respect to visible emissions only. So as above, a low differential pressure or particle detector alarm is not specifically actionable through CAM as an excursion. Each of these conditions warrants continued site monitoring and documented action, however.

EULIMEPREP, EUSDAMAT1&2, EUSDAMAT3, EUBYPRODUCT

This permitted equipment is in various stages of construction/installation/completion/availability, but none was in use at the time of the inspection. All is scheduled for availability by the MATS deadline of mid-April 2016.

EUAUXBLRS12

This table outlines requirements for the facility's Unit 1&2 auxiliary boiler. The equipment was not in use at the time of the inspection. All required records were available; the facility specifies Ultra-Low Sulfur Diesel (ULSD) No. 2 fuel oil, with a maximum sulfur content of 15 ppm by weight.

The facility reportedly uses a single supply of fuel oil for all on-site stationary equipment. During the FY2008 inspection, SL obtained a sample of this fuel oil from the Unit 1 and 2 complex, which was submitted to the MDEQ Laboratory for analysis of sulfur content and heating value. Results of this analysis (0.06% S) indicated compliance for other on-site units with sulfur-in-fuel requirements. All fuel oil deliveries since that time have been ULSD, and so the %S of on-site fuel oil should be less than the FY2008 test result.

The attached documentation demonstrates that this is indeed a "Limited Use" boiler w.r.t. the Boiler MACT; well below 10% of available capacity entails oil combustion.

EUCAT3DIESEL

This existing RICE was not in use at the time of the inspection. See FGEXISTINGRICE, below.

FGPARTSCLEANERS

This table contains the requirements for any future, new cold cleaner that is exempt from NSR permitting by R 336.1281(h) or R 336.1285 (r)(iv). There are no reported changes from the previous years; each appears to be a compliant solvent per Part 7 requirements. None were observed this inspection, but in the past all observed units have been "closed" while not in operation, with operating instructions posted.

FGEXISTINGRICE

This table outlines requirements which are common to the facility's diesel-fired internal combustion engines. The largest engine is has a capacity of about 9.3 mmBtu/hr heat input. None were in use at the time of the inspection. All required records were available; the facility uses ULSD No. 2 fuel oil, with a specified maximum sulfur content of 0.0015% by weight. The aforementioned oil purchase specifications and sample results were used to assess compliance with applicable sulfur requirements. Certain of these engines are subject to the Reciprocating Internal Combustion Engine (RICE) MACT, and these requirements are included in the ROP.

FGBOILER12

This table outlines requirements which are common to both EUBOILER1 and EUBOILER2.

*** monitoring/recordkeeping***

Each of the required CEMS/COMS was in place and functioning. As noted above, a variety of information was requested and received; no issues were noted for these periods; and each quarterly report is reviewed by AQD. No compliance issues were identified for these boilers as a result of the review of this information.

Note that combined Units 1/2 has certain requirements from the Consent Decree/PTI No. 39-15. Per discussion for each unit (above), and per the attached records, attaining and maintaining the various limits/averaging times has been implemented.

- The current SOx emission rate (combined Unit 1/2 at this time, but with separate CEMS planned for the future) was 0.638 pound per mmBtu heat input. This FG is also subject to 30-day rolling limits for SOx. These was presented as 0.509, compared to 1.00, currently allowed per Consent Decree/PTI no. 39-15. This is compliant with the requirements of the Consent Decree/ PTI No. 39-15 given the current equipment configuration. Individual unit limits will ratchet down starting in 2016 per the Consent Decree/PTI No. 39-15.

*** reporting***

The facility has completed and submitted all necessary quarterly excess emissions and CEMS performance reports, as well as QA/QC documentation required for the CEMS based on Part 75 requirements.

FGAUXBLRS3

These small (<10 mmBtu/hr maximum heat input), natural gas-fired boilers were not operating or specifically observed during the inspection. They are subject to Boiler

MACT (DDDDD) requirements, but without emission limits. Compliance date for this rule is January 31, 2016.

“SECTION 2” REQUIREMENTS

EGCOMBTURB

This large (about 20 MW; 233 mmBtu/hr), oil-fired stationary combustion turbine was not in use at the time of the inspection. It is currently in declared "mothball" status.

Note, as an existing turbine, this unit is not subject to requirements of 40 CFR 63, Subpart YYYY until the existing unit is modified or reconstructed.

Further note that this unit is in “mothballed” status with the grid operator since Fall 2011. Since the unit is not Acid Rain-subject, this “mothballing” has not been formalized with EPA/per CAA requirements, since those specific notification requirements are not applicable to this unit.

AQD continues to receive required semi-annual reports for this Permit Section, but this was not evaluated any further during this inspection.

PTI 141-12 for a diesel gen-set; EUCATDIESEL12

This new equipment was not in use at the time of the inspection, but was reviewed in 2014. The required hour meter was in place, and this equipment operates on ULSD. Testing is not required per RICE MACT/NSPS; this is an EPA-certified engine. This permit will be incorporated into the existing ROP as part of the current permit modification.

EVALUATION SUMMARY

As discussed with Ms. Cunningham and Mr. Firlit at the conclusion of the site visit; and incorporating complete review of records received as discussed above, as well as all activities associated with the development of the accompanying FCE, SL considers the facility to be in compliance with applicable air use rules, regulations and requirements at the time of the completion of this evaluation. Having not been notified of the Consent Decree/PTI No. 39-15 testing earlier this week was somewhat anomalous and surprising; and SL (AQD) and Consumers will continue to try to clarify the permit through required modifications.

ATTACHMENTS

- **Malfunction Abatement Plan (MAP) for the Pulse Jet Fabric Filter (PJFF) for Unit 2**
- **Records Demonstrating "Limited Use" categorization for EUAUXBLR12**
- **Records in support of current Consent Decree Emission Limits, including 30-day rolling averages for Units 1/2 SOx; Unit 3 SOx; and Unit 3 NOx.**
- **Calibration Reports for Each CEMS for 9-3-15; and**
- **Opacity Matrix for each "Unit-Day" of PM Testing conducted earlier in the week.**

NAME  DATE 9/14/15 SUPERVISOR 

