

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

B283535787

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: 08/02/2016
STAFF: Steve Lachance	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: On-site activities for FY '016 Inspection - also Unit 1 PM Stack Testing Observations for MATS and Consent Decree. See CA_B283535787. (SLachance, 8/3/16)		
RESOLVED COMPLAINTS:		

On August 2, 2016, SL conducted a scheduled inspection of the Consumers Energy, JH Campbell coal-fired electricity generation facility located at 17000 Croswell, Port Sheldon, Michigan. The purpose of the AQD inspection was to determine the facility's compliance with Renewable Operating Permit (ROP) No. MI-ROP-B2835-2013a; 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 supervisor) was present for the entrance interview/discussions, as were several JHC Business Area managers. Mr. Mike Rabideau (Units 1 and 2 CEMS) and Mr. John Ollie (Unit 3 CEMS) were present for the interview, supplied requested CEMS-based records and generally assisted/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:

Permitted Control Strategy - August 2016		
UNIT 1	UNIT 2	UNIT 3
100% Western Coal	60-100% Western Coal	100% Western Coal
---	---	Low-NOx Burners
---	Selective Catalytic Reduction (SCR)	SCR
Activated Carbon Injection (CI)	ACI	ACI
Dry Sorbent Injection (DSI)	DSI	Spray Dry Absorption (SDA)
Pulse Jet Fabric Filter (PJFF)	PJFF	PJFF

All of this control equipment is currently in place; and all was operating on the day of the inspection (with the exception of Unit 3's SDA, which is scheduled to start commissioning during the week of August 8, 2016.)

Other emission sources at the facility include a dry ash handling system; a wet bottom ash handling system; fuel handling equipment; miscellaneous material (lime, carbon, urea, etc.) handling systems; 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 is available for service, but has not been used for electrical production for several years. (It has operated sporadically and sparingly for testing/availability

purposes.)

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.

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. Cross-State Air Pollution Rule (CSAPR) permits have been issued and incorporated into MI-ROP-B2835-2013a.

Each of the coal-fired boilers (Units 1, 2 and 3) are ostensibly regulated by Michigan's Part 15 Rules ("Emission Limitations and Prohibitions – Mercury"). However, 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 are planned to 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) was granted for each unit based on the ongoing installation of additional site controls. The final compliance demonstration date for MATS is October 13, 2016.

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. These 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. Each of these boilers was subject to notification and tune-up requirements; final compliance date was January 31, 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 fabric filters (FFs) are continuously monitored for opacity using Continuous Opacity Monitoring Systems.

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 and imparts various unit-specific emission limits which are more stringent than other applicable requirements. This inspection focused in large 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; and as re-opened for inclusion of CSAPR permits as MI-ROP-B2835-2013a) contains tables of applicable requirements for the following emission units and flexible groups: (Section 1); EUASHNEW; EUBOILER1; EUBOILER2; EUBOILER3; EUACOALHAND; 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 August 2, 2016. Weather conditions were clear, bright, calm and about 70 degrees F to start; but climbing into the high 80s as the day progressed. Visible emissions from the main boiler stack emission points were evaluated prior to arriving on-site at about 9:15AM as 0% Opacity for Units 1 and 2; and 0-5% Opacity for Unit 3. The inspection commenced with an entrance meeting with Ms. Cunningham and Mr. Firlit, as well as various managers and technical assistants as noted above.

SL received the following records that had been specifically requested in anticipation of the inspection activities:

- Malfunction Abatement Plan (MAP) for each coal-fired unit's control devices
- Calibration Reports for Each CEMS for 8-2-16; and
- Opacity Matrix for each Unit on a semi-randomly selected day (July 29, 2016)
- Records Demonstrating "Limited Use" categorization for EUAUXBLR12

- Other Boiler MACT (40 CFR 63 Subpart DDDDD documentation
- Records in support of currently applicable Consent Decree Emission Limits

See attached; each of these is discussed below, in the equipment- or rule-appropriate section of this narrative. Please note, however, that the MAPs are "draft", i.e., not yet finalized per final performance acceptance of the control devices; that each CEMS "Passed" calibration on this day and so any CEMS-based values observed during this inspection are valid; and all COMS values were recorded as 1% or less for each 6-minute period for each unit on the day for which complete opacity data was requested.

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 (September 2015). 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.
- See the attached daily calibration reports for each CEMS. The requested CEMS calibrations for this date were received with no ongoing issues. Any CEMS observations for the day should be valid.
- PM testing taking place for Unit 1 on this day would cover both MATS and Consent Decree requirements.
- Other requested reports were provided; no emissions issues for the reporting periods. See specific discussions, below.
- All Consent Decree/MATS-required control devices are in place. All are operating at this time with the exception of Unit 3 Spray Dry Absorption, which will enter preliminary service next week.
- The new Cross State Air Pollution Control Rule (CSAPR) permits have reportedly had little/no impact on site operations.
- All requested Boiler MACT (40 CFR 63 Subpart DDDDD) records were readily available.
- The "Section 2" oil-fired turbine is available for service but has not been utilized commercially this year.
- Reciprocating Internal Combustion Engine (RICE) requirements were broadly reviewed and categorized as to new and existing units; emergency and non-emergency units; and identified for inclusion in the current renewal process (PTI #141-12) or as new units without permit requirements (Unit 3 SDA water pump engine.)
- Consumers is pursuing answers and avenues as to why lime injection rates for Unit 2 compliance on 40% Eastern Coal are so inflated (7500 pph vs. the 1500 (max.) pph expected.) Consumers has not accepted this equipment per vendor guarantee. More information should be available as the late summer/fall progresses.
- There have been no recent complaints to AQD.
- SL indicated his intention to inspect the facility with emphasis on November 2014's Consent Decree between Consumers and US EPA (as contained in PTI No. 39-15; additional emission limits, monitoring and recordkeeping are in effect, now.)

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.

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

The daily inspections required by the "JH Campbell Complex Fugitive Dust Control Program" and associated records are completed and maintained.

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

The equipment is designed as required by the RO Permit; and including the additional, permitted silo ("C"). 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, Unit 3 roof-top observations of the area on August 2, 2016 and quarterly fugitive dust control reports.)

EUBOILER1

This table outlines the applicable requirements for Boiler 1.

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.

Note that the CEMS for each unit have been extensively re-worked per the Consent Decree. For instance, stack gasses and Opacity are now monitored separately for Units 1 and 2; while for Unit 3, single systems have replaced the duct-specific monitors that were previously in use. Also, each unit now has a mercury CEMS to demonstrate MATS compliance.

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

Compliance with the particulate matter and opacity limits is based on acceptable stack testing and continued, proper operation and maintenance of the equipment, in conjunction with information provided by the CEMS and COMs. See below, as well as FGBOILERS1&2.

Applicable Consent Decree Emission Limits (as of August 2, 2016); see attached for CEMS-based compliance demonstrations:

Unit	Pollutant	Limit	Rolling Day Period	Compliance Date*	Observed Value - August 2, 2016
1	NOx	0.220	365 days	12/16/15	0.165 #NOx/mmBtu
1	SO2	1.00	30 days	1/3/15	0.341 #SO2/mmBtu
1	SO2	0.35	30 days	approx. 8/29/16	0.341 #SO2/mmBtu

*Per the Consent Decree, compliance dates are variously based on the Date of Entry for the Consent Decree; explicit dates stated in the Consent Decree; and within specific timeframes after final acceptance/demonstrated performance of required Control Devices.

The unit is also subject to a Consent Decree-derived PM emission limit of 0.015 lb/mmBtu with the new PJFF; testing was taking place on the day of inspection.

At the time of the inspection the following information was obtained from the Unit 1 Control Room:

Unit 1 Parameter	Value Observed - August 2, 2016
Gross MW	278 MW
Net MW	260 MW
Total Coal Flow	288,000 pounds per hour; 100% Western Coal

Net Coal Rate	1.11 (ratio of coal flow (kpph):Net MW; a measurement of efficiency)
Opacity	0%
SO2 - 1 hour	0.242 #/mmBtu
NOx - 1 hour	0.150 #/mmBtu
NOx - 365 day	0.165 #/mmBtu (0.220 = limit)
NOx - 90 day	0.172 #/mmBtu
NOx - 30 day	0.169 #/mmBtu
Hg - instantaneous	0.917 #/TBtu
Hg - 30 day	0.450 #/TBtu (1.2 = limit)

*** process/operational parameters***

Process Parameters - Unit 1	Observed Value - August 2, 2016
DSI	3052 pounds per hour (pph) lime injected
ACI	61 pph carbon injected
PJFF - Fields in Service	8 of 8
PJFF - Differential Pressure	6.5 inches of water
PJFF - Temperature Drop	1 degree F
PJFF - Opacity	0%
PJFF - Cleaning Air Pressure	7.9 pounds per square inch (psi)
PJFF - System Drag	1.73

These values can be compared to expectations/defined ranges within the Malfunction Abatement Plans (when finalized, "drafts" attached), but also serve as baseline measurements of control device parameters during proper operation. All systems were operating properly on this day, based on measured CEMS values and low opacity.

*** 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 State limit.)

Additional PM compliance testing, required by the Consent Decree and MATS, was taking place on August 2, 2016. SL checked in with the testing crew (Consumers' own crew; SL spoke with Tom S. and "Dillon") after Run1; testing was proceeding without issue at this time, and the filter for the run appeared to be very clean. No known issues with the testing were encountered during the day.

*** 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.

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

- Increasing Opacity
- High "Delta P"
- Low "Delta P"

- Broken Bag Detection
- Dust Detection
- Low Cleaning Pressure

Discussions with site operators indicated knowledge of these parameters and appreciation of the performance of the PJFFs (for each unit.)

*****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 Budget permitting/CSAPR 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"), the applicable requirements are included in the CSAPR Permit.

EUBOILER2

This table outlines the applicable requirements for the Boiler 2.

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.

Unit	Pollutant	Limit	Rolling Day Period	Compliance Date	Observed Value - August 2, 2016
2	NOx	0.100	30 days	1/19/15	0.039 #/mmBtu
2	NOx	0.080	90 days	6/15/15	0.032 #/mmBtu
2	SO2	1.00	30 days	1/19/15	0.420 #/mmBtu

This unit is subject to a future emissions limit (per Consent Decree) of 0.320 #SO2/mmBtu on a 365 -day rolling period in mid-2017 (based on the accumulation of Operating Days.)

At the time of the inspection, the following information was obtained from the Unit 2 Control Room:

Unit 2 Parameter	Value Observed - August 2, 2016
Gross MW	295 MW
Net MW	278 MW
Total Coal Flow	323,000 pounds per hour; 100% Western Coal
Net Coal Rate	1.15 (ratio of coal flow (kpph):Net MW; a measurement of efficiency)
Opacity	0%
SO2 - 1 hour	0.194 #/mmBtu
NOx - 1 hour	0.022 #/mmBtu
NOx - 90 day	0.032 #/mmBtu
NOx - 30 day	0.039 3/mmBtu

Hg - instantaneous	0.821 #/TBtu
Hg - 30 day	0.228 #/TBtu

Note, the Unit is constrained to operating on 100% Western Coal until SDI performance is accepted. During an attempted HCl test on July 7, 2016, lime injection rates necessary to control HCl emissions to the guaranteed level were multiple times the expected rate. The facility reverted to operations on lower sulfur, 100% Western Coal while pursuing a solution with the vendor. Additionally, the facility has sent a letter to EPA (attached "Notice of Potential Force Majeure Event Pursuant to Paragraph 215", dated July 27, 2016); MATS compliance is due by October 13, 2016, and on-site vendor activity to address performance with 40% Eastern Coal mix is scheduled for later this summer.

*** process/operational parameters***

Process Parameters - Unit 2	Observed Value - August 2, 2016
DSI	5100 pounds per hour (pph) lime injected
ACI	70 pph carbon injected
PJFF - Fields in Service	10 of 10
PJFF - Differential Pressure	6.9 inches of water
PJFF - Temperature Drop	6 degrees F
PJFF - Opacity	0%
PJFF - Cleaning Air Pressure	8.0 pounds per square inch (psi)
PJFF - System Drag	3.02
SCR -Differential Pressure	45 inches of water
SCR - Temperature Increase	15 degrees F
SCR NOx inlet (2 channels)	115 and 125 parts per million (ppm)
SCR NOx outlet (2 channels)	20 and 20 ppm
SCR NOx Reduction (2 channels)	82.6 and 84%
Ammonia Slip (measured; 2 channels)	0.2 and 2.4 ppm

*** 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.)

Initial performance testing for PM (as controlled by PJFF) had been completed pursuant to the Consent Decree in September 2015. Testing for continued compliance with the PJFF PM limit per Consent Decree is scheduled for late August.

*** monitoring/recordkeeping***

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, all requested information was available and received. No emissions 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 federal Budget permitting/CSAPR 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”), the applicable requirements are included in the CSAPR Permit.

EUBOILER3

This table outlines the applicable requirements for the Boiler 3.

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.

Unit	Pollutant	Limit	Rolling Day Period	Compliance Date	Observed Value - August 2, 2016
3	NOx	0.100	30 days	1/12/15	0.047 #/mmBtu
3	NOx	0.080	90 days	5/14/15	0.042 #/mmBtu
3	SO2	1.00	30 days	1/12/15	0.495 #/mmBtu

See also the attached Unit 3 screen-shots of monitored parameters. These are currently under construction and will be updated to include additional limits/averaging times.

Testing for continued compliance with the PJFF (just placed into service) PM limit per Consent Decree is scheduled for late August.

Because the control devices for this unit were the last to be installed, and the Unit has just recently come back on-line after their tie-in, multiple controlled emission limits per Consent Decree are still pending; these include SO2 on 30- and 365-day rolling time periods. Both of these should be in place by this time in 2017, pending Unit operating schedules.

At the time of the inspection, the following information was obtained from the Unit 3 Control Room:

Unit 3 Parameter	Value Observed - August 2, 2016
Gross MW	863 MW
Net MW	812 MW
Total Coal Flow	880,000 pounds per hour; 100% Western Coal
Heat Rate Efficiency	9500 Btu/kW; a measurement of efficiency with 10,000 being the target
Opacity	1.3%
SO2 - 1 hour	0.242 #/mmBtu
SO2 - 3 hour	0.439 #/mmBtu (1.2 limit)
SO2 - 30 day	0.495 #/mmBtu (1.0 limit until SDA-FGD is in place)
NOx - 1 hour	0.030 #/mmBtu
NOx - 3 hour	0.034 #/mmBtu (0.70 limit)
NOx - 90 day	0.042 #/mmBtu (0.080 limit)
NOx - 30 day	0.047 #/mmBtu (0.100 limit)
Hg - instantaneous	not yet available in a meaningfully portrayed manner; CEMS certification next week
Hg - 30 day	not yet available, haven't had 30 operating days yet; limit is 1.2 #/TBtu

process/operational restrictions

The overall acceptable evaluation of the PJFF is based on the opacity levels recorded, as well as parameters in the MAP. The on-site Unit Supervisor indicated reliance on differential pressure as well as opacity trends, but

also acknowledged limited experience with the new PJFF.

Process Parameters - Unit 3	Observed Value - August 2, 2016
SDA	not yet in service
ACI (A and B sides)	70 and 78 pph carbon injected
PJFF - Fields in Service	12 of 12
PJFF - Differential Pressure (A and B sides)	6.8 and 6.0 inches of water
PJFF - Temperature Drop (A and B sides)	4 and 3 degrees F
PJFF - Opacity (A and B sides)	1.4 and 1.4%
PJFF - Cleaning Air Pressure (A and B sides)	2.4 and 6.9 pounds per square inch (psi)
SCR-Differential Pressure	14 inches of water
SCR - NOx inlet (4 channels)	209, 188, 191, 111 ppm
SCR - NOx outlet (4 channels)	37, 40, 40, 31 ppm
SCR - NOx Reduction	82.3, 79.7, 79.1, 72.1%

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 State limit.) Testing for compliance with MATS/Consent Decree PM limits is scheduled for late August 2016.

*** monitoring/recordkeeping***

All required records for CEMS, COMS, and control devices were available, and no issues were identified.

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

Note, this unit is equipped with a PM CEMS. While not yet certified, it is in place and operating. Mr. Ollie provided an overview of it's functionality. Basically it converts a detection of light scattering over a know path to an electrical signal; and this signal will be correlated with the results of multiple PM load conditions. This correlative study/PM CEMS commissioning will take place in late August, 2016.

*** 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.

other

The unit is subject to Acid Rain and federal Budget permitting/CSAPR 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"), the applicable requirements are included in the CSAPR Permit.

EUCOALHAND

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. Irrigation was observed to be in use.

***** 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 therein. 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. An excursion for this equipment is 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.

(This area was not intensively reviewed during this inspection based on familiarity with the equipment, previous site visit observations, Unit 3 roof-top observations of the area on August 2, 2016 and quarterly fugitive dust control reports.)

EULIMEPREP, EUSDAMAT1&2, EUSDAMAT3, EUBYPRODUCT

This permitted equipment is in various stages of use and commissioning. No active material loading was observed on August 2, 2016, but this has been observed for Units 1 and 2 on other dates. Discussion and roof-top observations with Business Area Manager Mr. Dan S. provided an excellent perspective and improved understanding of miscellaneous material handling processes and Unit 3 control strategies. Various parameters were viewed and discussed from JFirlit's desktop access and as presented in each unit's discussion, above. Note, each control device (bin vent filter, containment of fugitives, etc.) is further address in the draft MAPs ([attached](#)).

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 [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. Also [attached](#) are this unit's timely Notice of Compliance Statement and required tune-up report per 40 CFR 63, Subpart DDDDD.

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 observed to be 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.

No further discussion is necessary here; requirements have been addressed for each unit, above. Per Consent Decree requirements, monitoring systems have been redesigned to cover each unit independently, and so more information is now available to assess individual unit performance.

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. Required Notice of Compliance Statements and tune-up reports per 40 CFR 63 Subpart DDDDD were readily available and are attached.

“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.

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.

AQD continues to receive required semi-annual reports for this Permit Section 2, but this was not evaluated any further during this inspection based on no commercial operations and inclusion of reporting in MAERS.

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

This new equipment was not in use at the time of the inspection, but was fully inspected in 2014. The required hour meter (88.2 accumulated unit hours) was in place, and this equipment operates on ULSD. Testing is not required per RICE MACT/NSPS; as previously documented, this is an EPA-certified engine.

This permit will be incorporated into the existing ROP as part of the current permit modification.

MISCELLANEOUS/OTHER

JH Campbell is a portion of the Consumers' coal-fired fleet which is subject to the Consent Decree. The decree contains "**System-Wide**" emission limits for SO2 and NOx on a calendar-year basis. SL requested documentation of compliance with these and received the attached "Periodic Report Submittal" (in part; dated March 14, 2016 and submitted directly to US EPA.) This states, for 2015:

Year	Annual NOx Limit	System NOx Emitted	Annual SO2 Limit	System SO2 Emitted
2015	15,245 tons	10,474 tons	57,900 tons	47,556 tons

Per Emissions Inventory 2015 reporting to MAERS, JH Campbell Complex emissions are:

Year	JHC NOx Emissions	JHC SO2 Emissions
2015	3,183 tons	23,524 tons

EVALUATION SUMMARY

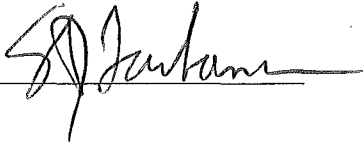
As discussed with Ms. Cunningham and Mr. Firlit at the conclusion of the site visit; and incorporating complete review of records received as discussed above, as well as all activities associated with the development of the accompanying FCE, SL considers the facility to be in compliance with applicable air use rules, regulations and requirements at the time of the completion of this evaluation.

Note, MATS requirements are subject to further and more complete review upon completion of all required testing and CEMS certifications. The issue of the Unit 2 SDA performance currently precludes use of mixed Eastern Coals and restricts the unit to 100% Western Coal. Resolution of this issue warrants further attention. The Notice of Compliance Statements for this rule are due by October 13, 2016.

ATTACHMENTS

- Malfunction Abatement Plan (MAP) for control devices servicing each each coal-fired Unit
- Calibration Reports for Each CEMS for 8-2-16
- Opacity Matrices for July 29, 2016
- Unit Specific Emission Rate Compliance Table per Consent Decree
- Records in support of current Consent Decree Emission Limits
- Notice of Potential Force Majeure Event - Letter dated July 27, 2016
- Unit 3 Screen Shots
- Records Demonstrating "Limited Use" categorization and other DDDDD reports for EUAUXBLR12
- DDDDD Reports for Unit 3 auxiliary boilers
- Periodic Report Submittal (in part) dated March 14, 2016

NAME



DATE

8/4/16

SUPERVISOR

