

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

B283630175

|   |                               |                           |
|---|-------------------------------|---------------------------|
| FACILITY: B. C. Cobb Plant  |                               | SRN / ID: B2836           |
| LOCATION: 151 N. Causeway, MUSKEGON   |                               | DISTRICT: Grand Rapids    |
| CITY: MUSKEGON  |                               | COUNTY: MUSKEGON          |
| CONTACT: JOE FIRLIT, AQD CONTACT  |                               | ACTIVITY DATE: 07/13/2015 |
| STAFF: Steve Lachance   | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR       |
| SUBJECT: Scheduled Inspection for '015 FCE. See CA_B283630175. (SLachance, 7/14/15) |                               |                           |
| RESOLVED COMPLAINTS:  |                               |                           |

SL conducted an inspection of Consumer Energy's BC Cobb Plant at 151 North Causeway, Muskegon, Michigan. Final on-site activities took place on Monday, July 13, 2015. SL was accompanied by KD of this office on this day. The primary purpose of the inspection was to determine the facility's compliance with current Renewable Operating (RO) Permit No. MI-ROP-B2836-2011.

Ms. Janet Zondlak of the facility and Ms. Katie Cunningham of Consumers (Jackson Office) accompanied SL/KD during the inspection; and Mr. Roger Vargo (site CEMS manager) provided assistance with CEMS/COMS and Filter Audit test activities. Other BC Cobb personnel (unit operators, etc.) variously assisted during the inspection activities.

On-site activities commenced at about 9:45 AM. Weather conditions were generally unsettled, post-storm with clearing skies and winds at about 15-20 mph, and between 65 and 70 degrees F. Upon arrival in the site vicinity, SL and KD assessed stack emissions from Fisherman's Landing at about 9:25 AM. In the gray, unsettled conditions, Visible Emissions were generally assessed as 0-5% opacity, although individual assessments were as high as 10%. More formal and complete Visible Emissions Observations were conducted on March 20, 2015 in conjunction with other on-site activities. AT that time, Stack Opacity/Visible Emissions were assess as between 5-15%; and this corresponded well to the facility's Opacity Matrix for that time frame. See [Attachment A](#), which also includes data from the day prior; all data indicates compliance with opacity standards for the main stack.

## FACILITY DESCRIPTION

The facility is located at 151 North Causeway, Muskegon, Michigan. Muskegon County is currently designated as attainment for all criteria pollutants.

The stationary source is subject to 40 CFR Part 70 because the potential to emit carbon monoxide, sulfur dioxide, nitrogen oxides, and particulate matter exceeds 100 tons.

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

The facility is an electricity generating station comprised of five units. Two coal-fired boilers, No's. 4 and 5, operate as base load units, while Unit No's. 1 through 3 were converted from coal to natural gas, are designed to operate as peaking units, but are currently in long-term

cold storage status. Emissions from the coal-fired units are controlled through the use of blended eastern and western coal and electrostatic precipitators, while No. 5 is also equipped with low-NO<sub>x</sub> burners. The facility has Continuous Emissions Monitoring Systems (CEMS) installed on each unit for stack gas flow, carbon dioxide, and nitrogen oxides. Unit No.'s 4 and 5 also have CEMS for sulfur dioxide and a common stack Continuous Opacity Monitoring System (COMS) for opacity.

Note, per federal consent decree, Units 4 and 5 are slated to cease operations in April, 2016.

Consumers Energy operates a contiguous coal receiving system on the banks of Muskegon Lake. Coal is stockpiled via radial stacker equipment. Dust control agents are immediately applied as necessary as coal is unloaded. Additional dust control measures include rolling and compacting coal piles along with the use of a water sprinkling system and water trucks. Specific coal handling points are controlled with fabric filter baghouses and enclosures.

Other emission sources at the facility include an auxiliary back-up boiler subject to Standards of Performance for New Stationary Sources, 40 CFR Part 60, Subpart Dc and National Emission Standards for Hazardous Air Pollutants (NESHAP) for Boilers at Major Sources, 40 CFR 63 Subpart DDDDD; emergency standby Reciprocal Internal Combustion Engines (RICE); flyash collection equipment; and cold parts cleaners.

The stationary source was subject to Prevention of Significant Deterioration (PSD) (40 CFR 52.21) review because the modified, gas-fired units have the potential to emit nitrogen oxides and carbon monoxide greater than 100 tons per year. Particulate matter was also subject to PSD review, since the potential to emit was above significant levels.

The NO<sub>x</sub> limit for FGBOILERS1,2&3 established under PSD/BACT review is more stringent than the limit established for these boilers under 40 CFR 60, Subpart Da.

The facility is subject to the Acid Rain (Title IV) provisions of the Clean Air Act of 1990, as amended. The facility's Acid Rain Permit, based on the permittee's original application, is included in the Renewable Operating Permit.

EUBOILERS1 through 5 are regulated by Michigan's Part 8 Rules ("Emission Limitations and Prohibitions – Oxides of Nitrogen"). EUBOILERS1 through 5 are also subject to the Clean Air Interstate Rule (CAIR) NO<sub>x</sub> annual trading program pursuant to Rules 802a, 803, 821, and 830 through 834; to the CAIR NO<sub>x</sub> ozone season trading program pursuant to Rules 802a, 803 and 821 through 826; and to the CAIR SO<sub>2</sub> annual trading program pursuant to Rule 420. The applicable requirements are included in the CAIR permits, which are incorporated into the ROP as Appendices.

The diesel-powered reciprocating internal combustion engine (RICE) used as a source of emergency backup power (EUACEMERGEN) is subject to the National Emission Standards for Hazardous Air Pollutants from Stationary RICE, 40 CFR 63, Subpart ZZZZ. The unit is an existing "emergency use" RICE which does not have to meet the requirements of this subpart or Subpart A. If the unit is reconstructed, the unit may be subject to applicable emission limitations and/or operational restrictions as well as initial notification requirements.

The stationary source is subject to the federal Compliance Assurance Monitoring (CAM) rule (40 CFR 64) because EUFLYASH, EUFUELHAND, EUBOILER4 and EUBOILER5 have both a control device and potential pre-control emissions of particulate greater than the major source threshold level. In addition, post-control emissions of particulate from EUBOILER4 and EUBOILER5 are over the major source threshold level. CAM requirements are included in the ROP.

NOTE: The filter separator dust collector associated with the fly ash collection system is considered inherent process equipment and is therefore not considered a control device pursuant to Compliance Assurance Monitoring (CAM: 40 CFR Part 64). The dust collector is for purposes of material recovery in order to route to dry fly ash to the silo; exhaust flow from this dust collector is routed to a wet venturi system which discharges to the ash ponds. Only the fly ash silo and truck loading dust collectors are subject to CAM monitoring/recordkeeping and reporting.

## COMPLIANCE EVALUATION

**This inspection/evaluation entailed a series of report reviews (Title V certifications, quarterly excess emissions/CEMS performance reports, MAERS, CAM reports, etc.), visible emissions readings and on-site activities. The applicable requirements are listed in RO Permit No. MI-ROP-B2836-2011.**

**This write-up will focus specifically on data collected and observations made during these inspection activities, and changes from the previous inspection (July 2014.)**

**Supplementary information pertinent to the Full Compliance Evaluation (FCE) is documented in the FCE Checklist accompanying this report.**

**The day's on-site activities began with an entrance interview with Ms. Zondlak, Ms. Cunningham and Mr. Vargo at about 9:45 AM:**

\*\*\*SL provided a copy of DEQ's Brochure entitled " Environmental Inspections; Rights and Responsibilities".

\*\*\*No recent changes in equipment; no current operational issues. (It became apparent over the course of the inspection and through discussion that the coal-fired units are currently opacity-limited in their operations. These are base-loaded units, but maximum output is limited by opacity restraints with current fuel.)

\*\*\*No reported user issues with the renewed ROP No. MI-ROP-B2836-2011.

\*\*\*The facility's Units 4 and 5 continue to burn a blended coal mix, at about 80% western coal: 20% eastern coal.

\*\*\*Units 1, 2 and 3 remain in certified "Long Term Cold Storage."

\*\*\*The most recent PM testing for Units 4 and 5 (as required by ROP) was completed in late summer, 2012, with no known issues (see below.) Testing for PM from each unit, as required by the ROP, was scheduled for July 14 and 15, 2015.

\*\*\*The facility would be conducting an opacity monitor audit on this day. This audit was, in fact the impetus for the timing of the inspection.

\*\*\*Operations on this day were reportedly quiet and normal, with no known issues. The units continue to operate at base load conditions. The maximum operations are limited by opacity constraints, and so maximum operations for each unit are about 150 MW (gross).

\*\*\*SL initially requested the following reports: Daily CEM/COMS calibration data for July 12 and 13, 2015; Daily Emission Reports for these days, including Opacity and Unit Load; and Average Data Trend Graphs from July 1, 2015 to present. SL subsequently asked for additional, specific information, including Certification Statements for the "drop filters" for the COMS Audit, and weekly CAM Monitoring reports for the last couple of months. SL left the site with all this in hand, with the exception of the Trend Graphs. See discussions and attachments, below.

The inspection then continued with emphasis on the Opacity Filter Audit, Control Room for Units 4 and 5; the CEMS Room for these units; EUFUELHAND; auxiliary equipment, etc.

### EU AUXBLR

**This equipment (maximum heat input capacity of 20.9 mmBtu/hr, dated 1991) was not in operation at the time of the inspection. Fuel oil service is no longer available to this equipment, as the diesel tank for it has been removed. The only possible use of oil in this boiler would involve running a temporary line to the other diesel tank (for mobile equipment) on-site. Laboratory results of the fuel used, from a sample taken during the 2007 inspection, indicate compliance with Part 4 sulfur-in-fuel limitations. All subsequent bills of lading indicate the purchase of "Ultra Low Sulfur Diesel" which is defined as less than 15 ppm (0.0015% sulfur). This same source of fuel oil is used for all site equipment.**

This unit is subject to the Boiler MACT for Major Sources (40 CFR 63, Subpart DDDDD), but as an existing Gas1 Emergency Use Unit, the boiler is not subject to testing requirements, but rather pending Work Practice and Energy Assessment requirements. Note that the Gas1 category allows for 48 hours of oil use (unlimited during gas curtailment.)

The facility recently requested an extension of the compliance date for this rule (1/31/16); this request was not granted, but rather deferred to US EPA based on the limitations included in 40 CFR 63 General Provisions on AQD's ability to grant such an extension.

### EU AC EMERGEN

This equipment was not in operation at the time of the inspection. The only recent operations have been short-term, weekly tests for availability. Laboratory results of the fuel used, from a sample taken during the 2007 inspection, indicate compliance with Part 4 and permit sulfur-in-fuel limitations. All subsequent bills of lading indicate the purchase of "Ultra Low Sulfur Diesel". See also FGEMERENGINES. SL observed the MACT-required hour meter (128.3 hrs, compared to 101.9 hrs observed last year) and maintenance log. SL concludes that this is a low-use unit and that these provisions appear to have been properly implemented.

### **EUFLYASH**

Wetted ash continues to be hauled to the JH Campbell landfill.

No visible emissions were noted from the scavenger baghouse, which was in operation, even though no loading was taking place. The manifold hood inside the enclosure was visibly capturing "fugitive" ash within the enclosure. The differential pressure across this baghouse was 2.3" which is within the stated range in the CAM plan.

Site discussions and CAM reporting all indicate that CAM has been properly implemented and that the control equipment (baghouses and enclosures) is operated properly. See Attachment B for current CAM documentation; note, "No" visible emissions is the accepted CAM indicator. Differential pressure and bag detector alarms are used to identify conditions that might lead to a control device failure, but visible emissions triggers required CAM action. (Note, this documentation covers all CAM requirements for the facility.)

### **EUFUELHAND**

This unit is subject to CAM as PM is controlled at multiple points by baghouses. Observations indicated no visible emissions from either the "Breaker House" (ground-level) or "Unit 4/5 Filter Receiver" (scavenger on the roof of the bunker room) baghouses. Each of these new baghouses is equipped with bag leak detectors and differential pressure monitors, however CAM excursions are defined as periods of visible emissions.

Recent (March 2015) Visible Emissions testing of affected units pertaining to coal handling indicates compliance with NSPS, Subpart Y limits (no visible emissions noted.)

Observations during the March, 2015 Subpart Y testing specifically indicated operations within CAM-specified ranges; no visible emissions were noted from either control device, broken bag detectors were functional and indicating normal operations, and differential pressures were within specified ranges. Note, coal was being handled at the time of these observations.

No visible emissions were observed during the on-site inspection on July 13, 2015.

The CAM documentation discussed above was readily available upon request.

### **EUBOILER4; see also FGBOILERS4&5**

Control Room observations (with assistance from Control Room Operator "Dennis") at about 11:50 AM on 7/13/145 indicated 150 MW (gross; about 75-80% maximum fuel feed speed on all 4 coal feeders).

Control Room charts indicated the following operations:

ESP on "Automatic" mode to minimize opacity; but due to the concurrent Opacity Monitor Audit, COMS reading was not valid at this time.

**NOx = 0.36#/mmBtu**

SOx = 1.0#/mmBtu

200-hour graphs showed that NOx varied from about 0.3 to about 0.4 #/mmBTU based on load demand, while SOx emissions were very steady over this time period.

This unit's particulate matter (PM) emissions were last tested in 2012, with a result of 0.0406 lb PM/1,000 exhaust gas, corrected to 50% excess air. This compares to the limit of 0.18 lb PM/1,000 exhaust gas, corrected to 50% excess air. Testing (as required by the ROP) was scheduled to take place later this week.

#### **EUBOILER5; see also FGBOILERS4&5**

**Control Room observations (again with assistance from Control Room Operator "Dennis") at about 11:50 AM on 7/13/145 indicated 154 MW (gross; about 73-90% maximum fuel feed speed on all 4 coal feeders).**

Control Room charts indicated the following operations:

ESP on "Automatic" mode to minimize opacity; but due to the concurrent Opacity Monitor Audit, COMS reading was not valid at this time.

**NOx = 0.15#/mmBtu; note the benefit of the low-NOx combustion technology, compared to Unit 4**

SOx = 1.0#/mmBtu

200-hour graphs showed that NOx varied from about 0.1 to about 0.17 #/mmBTU based on load demand, while SOx emissions were very steady over this time period.

This unit's particulate matter (PM) emissions were last tested in 2012, with a result of 0.0072 lb PM/1,000 exhaust gas, corrected to 50% excess air. This compares to the limit of 0.18 lb PM/1,000 exhaust gas, corrected to 50% excess air. Testing (as required by the ROP) was scheduled to take place later this week.

#### **FGBOILERS4and5**

SL and KD visited the CEMS shelter at about 10:30 AM. Mr. Vargo provided the various CEMS-based reports that were requested at the start of the inspection. There were no issues with the current performance of these CEMS, and so the CEMS values as presented here and in the Control Room are taken as valid at this time. Note, no compliance issues were noted

based on the requested and reviewed materials and reports.

Specifically, SL requested and received Calibration Detail reports for each CEMS system for 7/12 and 7/13/15. See Attachment C. Data from all CEMS are valid; no issues were noted in the data for these dates.

SL also requested and received 1-Hour Average Data for 7/12/15 (the previous day.) See Attachments D and E. SL also received Opacity Matrices for 7/12 and 7/13/15. See Attachment F. Again, no emissions issues are noted (although, of course, the report for the day of inspection was incomplete; and the COMS was in maintenance mode during the COMS Filter Audit.)

Review of "Average Data Trending Reports" for the last two weeks showed consistent operations and NOx/SOx emissions. See Attachment G.

Here in the CEMS Control Room, SL and KD were introduced to Consumers Testing Personnel Mr. Brian Glendenning and Mr. Gregg Koteski. They were assisting Mr. Vargo in preparing for and conducting the annual COMS Filter Audit. At this time, SL and KD accompanied Mr. Vargo and Ms. Cunningham to the combined stack duct where the COMS is located and witnessed a portion of the Audit Filter Test. Basically the system (transmitter/receiver and mirror on the stack's opposite side) are informally cleaned; "zeroed"; and challenged with a sequence of filters of certified optical density. BC Cobb possesses their own set of filters for such test; see attached "Certification of Neutral; Density Audit Filters" (Attachment H); the filters used in the audit corresponded to about 16.3, 24.9 and 46.1% Opacity.

Mr. Vargo stayed in verbal contact with the CEMS Control Room while he variously "dropped filters" and then allowed the system to "zero." The sequence (per method) entailed (in SL's words and recollection and in no way necessarily totally corresponding to the method or Mr. Vargo's actions) briefly cycling through the set of three filters five times with zeros in-between (this established that the system was responding appropriately to the filters); a six-minute block capturing the system's "zero" value; a six-minute block for each filter; and a final six-minute zero block. SL noted the following system values at the system location (instantaneous, but probably representative of the system's 6-minute values) of -0.5% for "0"; and 16.3%, 24.8% and 46.2% for each filter, respectively. Final results of the Audit are pending, but site observations and Consumers' indications are that the COMS was operating per requirements.

### FGBOILERS1,2&3

These were not in operation at the time of the inspection. These units are currently in long-term "cold storage" and the facility has submitted necessary notifications per 40 CFR 75.61(a) (7) in order to waive on-going CEMS requirements, etc.

### FGEMERENGINES

**None of the emergency RICE were operating at the time of the inspection. The current RO Permit incorporates requirements for these, based on the new RICE MACT. SL observed the required operations and maintenance logs for the emergency fire pump engine; no issues.**

### FGPARTSCLEANERS

SL observed a parts cleaner in the Fuel Handling Garage and noted the following: it was closed while not in use; it was small enough to be considered to be exempt; Operational Procedures were posted; and Ms. Zondlak confirmed that the same compliant solvent ("ZEP 143") is still in use in all of the facility's regulated machines.

## EXIT INTERVIEW

On-site activities concluded with an Exit Interview. The same people participated as in the Entrance Interview. SL stated no known concerns and acknowledged receipt of all requested information, with the exception of the two-week "Trend Graphs" he had requested. SL understood that these required access to another data handling system, but would represent the data he had viewed this day. SL expected electronic receipt of this data within a couple of days.

The facility's new and current Responsible Official is Mr. Norman Kapala.

Ms. Cunningham had a couple of issues for the upcoming ROP renewal (application due by February 2016); this included how do CAIR Permits relate now to CASPR and MATS (to be referred to BCarley of AQD-Jackson); and other small, miscellaneous issues (R330, etc.) But her main issue is how EPA's new (effective October, 2015) Coal Combustion Residual ("CCR") rule might be addressed in ROPS and ROP applications. Both Ms. Cunningham and SL will study whether the CCR is in part an air requirement pursuant to the Clean Air Act; it does have "Fugitive Dust" requirements, it is just uncertain if these are derived from, or enforceable through, the Clean Air Act. SL postulated that it could perhaps be addressed as a General Condition, but more study and thought is needed at this time.

SL and KD left the site slightly before 2 PM.

## SUMMARY

**Based upon the information reviewed, the facility appears to be in compliance with applicable rules and regulations as compiled in MI-ROP-B2836-2011. This conclusion is based on the contents of required reports submitted by the facility; review of requested records; as well as the on-site observations of July 13, 2015.**

## ATTACHMENTS

A; Stack Opacity Matrix, 3/19 and 3/20/15

B; Weekly CAM Records

C; CEMS/COMS Calibration Details, 7/12 and 7/13/15

D; Unit 4 Hourly Average Data Report for 7/12/15

E; Unit 5 Hourly Average Data Report for 7/12/15

F; Combined Unit Opacity Matrix for 7/12/15 and 7/13/15 (partial)

G; Data Trend Graphs for the Period 7/1/15 through 7/13/15 (received on 7/14/15) *(SW)*

H; Certification of Neutral Density Audit Filters

NAME *SP Farbar*      DATE *7/15/15*      SUPERVISOR *SW*

