DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N319563054

FACILITY: BAY CITY ELECTRIC LIGHT & POWER		**SRN / ID:** N3195
LOCATION: 619 S HENRY ST, BAY CITY		**DISTRICT:** Bay City
CITY: BAY CITY		**COUNTY:** BAY
CONTACT: Neil Samyn , Generation Supervisor		**ACTIVITY DATE:** 05/11/2022
STAFF: Kathy Brewer	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: on site and records review PTI# 823-91B MACT ZZZZ		
RESOLVED COMPLAINTS:		

I (KLB) conducted an announced inspection at the City of Bay City Electric Light & Power (BC EL&P) Henry Street generating station. The BC EL&P was issued air permit, PTI #823-91B in 2015 for two dual fuel diesel engines installed in 1993, each driving one of two 7500 kW (Dependable capacity) generators (7900 kW nameplate).

The facility is also subject 40 CFR Part 63 Subpart ZZZZ. MACT ZZZZ required testing was being performed on the engines during the inspection.

I viewed the electric power generators (#3 & #4), including metering devices and fuel handling equipment. I met with Neil Samyn, Generation Supervisor, for the BC EL&P to review the required records for the emission units during the inspection and again on June 3, 2022. We viewed the engine diesel fuel use and natural gas fuel use records and the spreadsheet where the engine operating hours, kilowatts generated, and emissions based on operating information is tracked and recorded.

Since the last inspection and test several BC EL&P positions have been filled by different people including the Generation Supervisor position. All required and requested information was available but some records associated with 12 month rolling averages were not provided until July 1, 2022.

MAERs reported emissions for 2021:

Pollutant	Lbs
CO	2856.21
NOX	19165.82
PM10,FLTRBLE	153.98
PM10,PRIMARY	120.22
PM2.5,FLTRBL	153.98

PM2.5,PRIMRY	**120.22**
SO2	**147.42**
TOC	**178.61**
VOC	**872.06**

Upon arrival I did not noticed any visible emissions form the engine exhaust stack.

Based on the inspection findings the facility appeared to be in compliance with applicable air regulations.

Attached

Diesel fuel supplier June 2021 Ultra Low Diesel Fuel delivery documents

Photo of Engine#3 (PO4206718A) and #4 (PO4206718B) manufacturer plate

Fuel Limit v use Yearly and Monthly graphs

Monthly NOx v limit graphs

Monthly SO2 v limit graphs

Monthly and 12 month rolling records May 2021, Aug 2021, Feb 2022

- Diesel use
- Natural gas use
- NOx Emissions
- SO2 Emissions

File review

2021, 2022 40 CFR Part 63 Subpart ZZZZ area source RICE MACT semi-annual reports

MAERS 2021 emissions

PTI 823-19B Eval form

FG0001:

Two dual fuel fired, compression ignition Reciprocating Internal Combustion Engine (RICE) generators each fitted with a catalytic oxidizer for CO control. The units are operated as peaking units. The RICE initially fire up on diesel fuel with the transition to a 95% NG and 5% diesel mix occurring over 20-30

Emission limits

The site uses an emission constant of 0.0397 lbs SO2/MMBtu. Records review for the months of May 2021, August 2021, and February 2022 indicate the facility is compliance.

Pollutant	Limit	Time Period / Operating Scenario	May 2021	Aug 2021	Feb 2022
1. SO_2	0.56 lb/MMBTU heat input	24-hour	16.98 lb/month	60.1 lbs/month	0.32 lbs/month
Equivalent to using diesel fuel with a 0.5% sulfur content and a heat value of 18,000 BTUs per pound.					

Material Limits

Review of the fuel usage for both engines during the months of May 2021, August 2021, and February 2022 indicate the facility was in compliance.

Fuel	Limit	Time Period / Operating Scenario	May 2021	Aug 2021	Feb 2022
1. Natural gas	1,405,900 dscf/day	Monthly average	780 MCF/month ~26,000 dscf/d	3371 MCF/month ~112,370 dscf/day	0 0 dscf/day
2. Diesel	890 gal/day	Monthly average	416 gal/moth 13.4 gal/day	1463 gal/month 48.8 gal/day	8 gal/month 0.3 gal/day

Process/Operational restrictions

None required in the PTI

Design/Equipment parameter conditions, or Testing/Sampling

SC VI.1 requires the facility to monitor and record the natural gas usage. A manual record of the reading from the gas company meter taken before an engine is started and when an engine is stopped is entered in the facilities electronic tracking system.

SC VI.2 requires the facility to monitor and record the diesel fuel usage. A manual record of the reading from the day tank glass column taken before an engine is started and when an engine is stopped is entered in the facilities electronic tracking system.

Testing/Sampling

None currently except those required by 40 CFR Part 63 Subpart ZZZZ for Area Source facilities that are over 300 bhp, existing, dual fired, non-emergency, compression ignition engines at an area source. Stack testing is required once every three years or 8760 hours of operation. Stack testing was ongoing during the inspection.

Stack results reported July 11, 2022 indicate the facility was in compliance with required CO control.

Engine	CO DE@15%O2; Fuel use 93% NG, 7% diesel
EU00001 (Engine#3)	85%
EU00002 (Engine#4)	86%

Monitoring and Record Keeping

SC VI.1 requires the facility to keep all required calculations and make them available to the AQD. During the inspection the facility produced calculations for calendar years 2020, 2021 and 2022.

SC VI.2 requires the facility to monitor and record the natural gas usage. A manual record of the reading from the gas company meter taken before an engine is started and when an engine is stopped is entered in the facilities electronic tracking system.

SC VI.3 requires the facility to monitor and record the diesel fuel usage. A manual record of the diesel use cumulative meter is taken before an engine is started and when an engine is stopped is entered in the facilities electronic tracking system.

VI.4 requires the facility to keep monthly calculation records for diesel and natural gas usage. During the inspection the facility produced the monthly fuel usage information for calendar years 2020, 2021 and 2022.

SC VI.5 The generator is required to burn low sulfur diesel fuel (0.5% sulfur content). The diesel oil supplier certifies a maximum sulfur content of 15 ppm. A copy of the most recent fuel oil purchase w/sulfur content certification from June 8, 2021 is attached. Based on the information the fuel provided to BCE is in compliance with permit limits.

Reporting

Review of semiannual MACT ZZZZ reports found no reported deviations or periods when the CMS was out of control.

Stack/Vents

The following stack/vent information was confirmed during the inspection:

Exhaust gases from the stacks listed in the table below discharge unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Description
1. SV00001	**34**	**75**	**Engine#3**
2. SV00002	**34**	**75**	**Engine #4**

FGFACILITY

The monthly operating hours, natural gas usage, distillate oil usage, and emissions for calendar years 2020, 2021 and 2022 for engine #3 and #4 were reviewed.

Emission Limits

Review of the NOx emission records for the months of May 2021, August 2021, and February 2022 indicate the facility was in compliance.

Pollutant	Limit	Time Period / Operating Scenario	May 2021	Aug 2021	Feb 2022
1. NOx	**99.9 tpy**	**12-month rolling time period as**	**0.87 tpy**	**0.79 tpy**	**0.79 tpy**

		determined at the end of each calendar month.			

Material Limits

The fuel usage records reviewed for both engines during the months of May 2021, August 2021, and February 2022 indicate the facility was in compliance.

Fuel	Limit	Time Period / Operating Scenario	2020 MCF Eng 3 + MCF Eng 4	2021 MCF Eng 3 + MCF Eng 4
3. Natural gas	**74,600,000 dscf/yr**	**12-month rolling time period as determined at the end of each calendar month.**	**3211 +3851 = 7,062,000 dscf/yr**	**1266 + 4712 = 5,978,000 dscf/yr**
4. Diesel	**64,500 gal/yr**	**12-month rolling time period as determined at the end of each calendar month.**	**2443+ 2225 = 4668 gal/yr**	**1424 + 2199 = 3,623 gal/yr**

Process/Operational restrictions

None required in the PTI

Design/Equipment parameter

SC IV.1 requires the facility to have a device to satisfactorily monitor and record the diesel fuel usage. A manual record of the diesel use cumulative meter is taken before an engine is started and when an engine is stopped is entered in the facilities electronic tracking system.

SC IV.2 requires the facility to have a device to satisfactorily monitor and record the natural gas usage. The site uses the gas company meter for readings. An initial reading is taken before an engine is started and a reading take when an engine is stopped.

Testing/Sampling

SC V.1 requires performance test for NOx at the stack test after the 2015 PTI issuance. The most recent stack test for NOx emissions was conducted in May of 2016.

The facility also conducts testing required by 40 CFR Part 63, Subpart ZZZZ. To show a 70% CO reduction. Testing has been conducted every three years since the catalyst installation in 2013. Testing was performed during the inspection on May 11, 2022 on Engine #3 and #4. The test results submitted July 11, 2022 reported an average 85% CO reduction for EU00001 and 86% CO reduction for EU00002.

Monitoring/Recordkeeping

SC VI.1 requires the facility to keep all required calculations and make them available to the AQD. During the inspection the facility produced calculations calendar years 2020, 2021 and 2022

SC VI.2 requires the facility to monitor and record the natural gas usage. A daily manual record of the reading from the gas company meter taken before an engine is started and when an engine is stopped entered in the facilities electronic tracking system.

SC VI.3 requires the facility to monitor and record the diesel fuel usage. A manual record of the diesel use cumulative meter is taken before an engine is started and when an engine is stopped is entered in the facilities electronic tracking system.

SC VI.4 requires the facility to keep monthly calculation records for 12 month rolling NOx. During the inspection the facility produced the calculations and NOx emissions for calendar years 2020, 2021 and 2022. The following NOx emissions rates are used for each engine:

Engine	NOx emission rate (2016 stack test)
EU00001(Engine #3)	1.37 lbs/MMBTU
EU00001(Engine #4)	1.39 lbs/MMBTU

Reporting

None required in the PTI except those in 40 CFR Part 63 Subpart ZZZZ. For 2021 and 2022 reports received no deviations were reported. No periods during which the CMS was out of control were reported.

Stack/Vent restrictions

None required in the PTI

NAME Kathy Brewer DATE 8/8/2022 SUPERVISOR Chris Hare