

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

B400167309

FACILITY: LBWL, Erickson Station and Delta Energy Park		SRN / ID: B4001
LOCATION: 3725 South Canal Road, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: EATON
CONTACT: Nathan Hude , Environmental Services		ACTIVITY DATE: 03/22/2023
STAFF: Julie Brunner	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Compliance inspection of LBWL – Erickson Station and Delta Energy Plant (DEP) as part of a Full Compliance Evaluation (FCE)		
RESOLVED COMPLAINTS:		

As part of a Full Compliance Evaluation (FCE), AQD staff conducted an on-site compliance inspection of Lansing Board of Water and Light (LBWL) – Delta Energy Park (DEP) on March 22, 2023. The last compliance inspection of LBWL – Erickson Power Station (DEP was under construction) was on June 29, 2021.

Arrived: 8:30 am

Weather: 40°F, SSE @ 9 MPH, UV Index 0 Low

Departed: 2:00 pm

Contacts:

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AQD Staff:

Julie Brunner, Lansing District

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Facility Description:

The stationary source consisted of one utility power plant that generated electricity. Erickson Station had one (1) coal-fired boiler capable of generating electric power, a diesel fuel-fired auxiliary boiler, coal handling systems and storage, fly ash handling systems and storage silos, and exempt equipment including fuel storage tanks, emergency diesel fuel-fired fire pump, and mechanical draft cooling towers. The Erickson Station was retired on November 28, 2022.

Adjacent to Erickson Station is the Delta Energy Park (DEP), a combined-cycle, cogeneration facility consisting of three natural gas-fired turbines, two heat recovery steam generators (HRSG) with duct burners, a natural gas-fired auxiliary boiler, natural gas and diesel-fired emergency engines, and a mechanical draft cooling tower. DEP is constructed and operating under the requirements of PTI 74-18D. This PTI will be incorporated into the ROP at renewal.

LBWL – Erickson Station and DEP are considered to be one stationary source. They are co-located on the same property, have the same owner, and have the same 2-digit SIC code. The stationary source is located in west Lansing and the surrounding area is mainly commercial and industrial properties.

Regulatory Overview:

The facility operates per the conditions of Renewable Operating Permit (ROP) No. MI-ROP-B4001-2015. The ROP was last renewed on December 8, 2015, and the ROP renewal application was submitted on May 12, 2020. An amendment to the ROP renewal application to incorporate PTI 74-18D for DEP was submitted April 12, 2023.

Also, at renewal PTI 43-20 which incorporates the Consent Agreement and Final Order (CAFO) Docket No. CAA-05-2019-0040 requirements into a PTI for Erickson Station (issued 10/08/2020) will not be incorporated. A request to void this PTI will be made in June 2023, when the final allowance surrender required in the CAFO is completed.

LBWL Delta Energy Park (DEP) is currently a major Prevention of Significant Deterioration (PSD) source due to the potential to emit of greater than 100 tons per year (tpy) of regulated pollutants. Potential emissions of carbon monoxide (CO) and nitrogen oxides (NO_x) at this facility are greater than 100 tpy. It was demonstrated that due to the retirement of Erickson Station that the facility is minor (area) source of hazardous air pollutants (HAPs) with the potential to emit (PTE) less than 10 tpy of any single HAP and 25 tpy of aggregate HAPs. The facility is subject to the Title V - Renewable Operating Permit Program, and also the following federal regulations for air pollutants as discussed below. All requirements for Major Source MACTs will be removed from the ROP.

40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units - The provisions of this subpart apply to each steam generating unit that commences construction, modification, or reconstruction after June 9, 1989, and that has a heat input capacity from fuels combusted in the steam generating unit of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/h). The natural gas-fired auxiliary boiler, EUAUXBOILER at DEP is subject.

40 CFR 60, Subpart IIII, Standards of Performance for Compression Ignition Internal Combustion Engines (CI ICE) - The provisions of this subpart apply to CI ICE that commence construction (ordered) after July 11, 2005 and manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006. The Clark Fire Pump engine (EUFENGINE) is used for emergency purposes only and is subject to 40 CFR 60, Subpart IIII. At DEP, EUEMGD is a subject emergency engine and EUFPRICE is a subject fire pump engine.

40 CFR 60, Subpart KKKK, Standards of Performance for Stationary Combustion Turbines - The provisions of this subpart apply to stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBtu per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005. The natural gas-fired turbines, EUCTGSC1, EUCTGHRSG2 and EUCTGHRSG3, at DEP are subject.

40 CFR 60, Subpart TTTT, Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units - This subpart establishes emission standards and compliance schedules for the control of greenhouse gas (GHG) emissions from a steam generating unit, IGCC, or a stationary combustion turbine that commences construction after January 8, 2014 or commences modification or reconstruction after June 18, 2014. The natural gas-fired turbines, EUCTGSC1, EUCTGHRSG2 and EUCTGHRSG3, at DEP are subject.

40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT) – This subpart establishes emission

limitations and operating limitations for HAPs emitted from stationary RICE located at major and area sources of HAP emissions. For the diesel fuel-fired engines designated as EUPENGINE (located at Erickson), and EUEMGD and EUFPRICE (located at DEP), compliance with the RICE MACT is demonstrated through compliance with 40 CFR 60, Subpart IIII.

40 CFR 63, Subpart CCCCC, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities (Area Source MACT) - This subpart establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF). At Erickson is a 1000-gallon double-walled above ground storage tank (AST) containing unleaded gasoline used to dispense gasoline to BWL vehicles which is now subject. AQD does not have delegation for this area source MACT but will be adding the requirements for Subpart CCCCC to the ROP.

40 CFR 63, Subpart JJJJJ, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (Area Boiler MACT) - This subpart establishes emission limitations and operating limitations for industrial, commercial, and institutional boilers within a subcategory, as listed in 40 CFR 63.11200 and defined in 40 CFR 63.11237, located at an area source. This regulation doesn't apply to the natural gas-fired boiler at DEP. The Cleaver Brooks No.2 oil-fired auxiliary boiler, EUAUXBLR, was subject to the Boiler MACT (Subpart DDDDD) as an existing boiler (date of installation was June 4, 2010 or earlier) and was re-permitted as a "limited use" boiler in May 2015 (PTI 71-15). The requirements for an existing limited-use boiler at an area source of HAP emissions per 40 CFR Part 63, Subpart JJJJJ will be added at renewal. The requirements for the Boiler MACT (Subpart DDDDD) will be removed. EUAUXBOILER at DEP is not subject because it is a "gas-fired" boiler. AQD does not have delegation for this area source MACT.

The natural gas-fired turbines at the DEP are subject to 40 CFR 72 Acid Rain Permit requirements which will be included in the ROP renewal.

The Cross State Air Pollution Rule (CSAPR) requirements (40 CFR 97) - The natural gas-fired turbines at the DEP are subject to CSAPR.

The following is a list of emission units on ROP No. MI-ROP-B4001-2015:

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Install Notes / Standards
EU004	Babcock & Wilcox pulverized coal-fired boiler. No. 2 fuel oil can be used for startup and flame stabilization. The boiler is rated at 1668 MMBTU/hr. The boiler is equipped with low NOx burners (LNB) and over fire air (OFA). Particulate matter from the boiler is controlled by an electrostatic precipitator (ESP). The single ESP was replaced 11/20/1998 with two ESPs of more efficient design.	Retired / the coal pile has been cleaned out and they will start demolishing the coal conveyors soon
EUAUXBLR	Cleaver Brooks limited use auxiliary boiler Model CBI89-500 is fired on No. 2 oil and is	5-7-1971 /

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Install Notes / Standards
	used to supply plant heat. The boiler is ignited with liquefied petroleum gasoline (LPG). The unit has a 20,922,000 BTU/hr maximum design heat input.	40 CFR 63, Subpart JJJJJJ
EUFENGINE	John Deere Power Systems 175 bhp 4-stroke Diesel Compression Ignition Clark Fire Pump Emergency Engine, Model JU6H-UFADM8. Maximum heat input is approximately 1.4 MMBTU/hr with a 6.8 L/cylinder displacement.	11-2013 / 40 CFR 60, Subpart III / 40 CFR 63, Subpart ZZZZ
EUASHDC1	Ash handling equipment, including a particulate control device, used to transfer ash from storage to 2 load out silos. (main dust collector).	May use during cleanup of ash handling – not operating
EUASHDC2	Ash handling equipment, including a particulate control device, used to load trucks from the load out silos. (load-out silo bin vent)	May use during cleanup of ash handling – not operating
EUASHDC3	Ash handling equipment, including a particulate control device, used to transfer ash to 2 storage silos. (truck unloading dust collector).	May use during cleanup of ash handling – not operating
EUASHDC4	Ash handling equipment, including a particulate control device, used to transfer ash to a mass storage building. (mass storage dust collector).	May use during cleanup of ash handling – not operating
EUASHDC5	Ash handling equipment, including a particulate control device, used to transfer ash from Erickson station to the storage facilities. (Erickson fly ash system baghouse)	Retired
EUCOLDCLEANER	Thirty gallon parts washer for cleaning/degreasing parts using Stoddard solvent/mineral spirits.	1998

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DEP – PTI 74-18D (not in the ROP):

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation	
		Date / Modification Date	Flexible Group ID
EUCTGHRSG2	A nominally rated 667 MMBTU/hr natural gas-fired combustion turbine generator (CTG) coupled with a heat recovery steam generator (HRSG). The HRSG is equipped with a natural gas-fired duct burner rated at 204 MMBTU/hr to provide heat for additional steam production. The CTG is capable of operating in combined-cycle mode where the exhaust is routed to the HRSG or in simple-cycle mode where the HRSG is bypassed. The HRSG is not capable of operating independently from the CTG. The CTG/HRSG is equipped with a dry low NO _x burner (DLNB), selective catalytic reduction (SCR), and oxidation catalyst.	5-27-2021 (HRSG Bypass mode) and 11-1-2021 (combined cycle mode)	FGCTGHRSG
EUCTGHRSG3	A nominally rated 667 MMBTU/hr natural gas-fired CTG coupled with a HRSG. The HRSG is equipped with a natural gas-fired duct burner rated at 204 MMBTU/hr to provide heat for additional steam production. The CTG is capable of operating in combined-cycle mode where the exhaust is routed to the HRSG or in simple-cycle mode where the HRSG is bypassed. The HRSG is not capable of operating independently from the CTG. The CTG/HRSG is equipped with a DLNB, SCR, and oxidation catalyst.	5-27-2021 (HRSG Bypass mode) and 10-31-2021 (combined cycle mode)	FGCTGHRSG
EUCTGSC1	A nominally rated 667 MMBTU/hr natural gas-fired simple cycle CTG. The CTG will utilize DLNB and good combustion practices.	5-27-2021	NA
EUAUXBOILER	A natural gas-fired auxiliary boiler rated at less than or equal to 50 MMBTU/hr will facilitate startup of the CTG/HRSG trains and provide steam to the steam turbine generator (STG) seals. The boiler will also provide warming steam to the HRSG, and other related services. The boiler will not produce high pressure steam for use in electric generation. The auxiliary boiler will utilize low NO _x burners (LNB) and/or flue gas recirculation (FGR).	10-6-2021	NA

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation	
		Date / Modification Date	Flexible Group ID
EUEMGD	A 2,206 HP diesel-fueled emergency engine manufactured after 2006 serving a 1,500 kW generator with associated fuel oil tank. The engine generator is used to charge the batteries in the uninterruptible power supply battery system and to facilitate operations during idling of the plant for routine maintenance checks and readiness testing.	4-21-2021	NA
EUFPRICE	A 315 HP diesel-fueled emergency engine manufactured after 2009, with a heat input of 2.5 MMBTU/hr and associated fuel oil tank. The engine powers a fire pump used for fire suppression during an emergency.	4-6-2021	NA
EUCOOLTWR	A five-cell, wet mechanical draft cooling tower. Particulate in water droplets will be controlled with drift eliminators.	11-9-2021	NA
EUSPACEHTR1	Backup natural gas-fired space heater rated at 3.2 MMBTU/hr heat input.	11-10-2021	FGSPACEHTRS
EUSPACEHTR2	Backup natural gas-fired space heater rated at 3.2 MMBTU/hr heat input.	11-10-2021	FGSPACEHTRS
EUSPACEHTR3	Backup natural gas-fired space heater rated at 3.2 MMBTU/hr heat input.	11-10-2021	FGSPACEHTRS
EUSPACEHTR4	Backup natural gas-fired space heater rated at 3.2 MMBTU/hr heat input.	11-10-2021	FGSPACEHTRS

Exempt Equipment:

EUCOLDCLEANER (Cold Cleaner): Thirty gallon parts washer for cleaning/degreasing parts using Stoddard solvent/mineral spirits per Rule 281(2)(h) at Erickson Station.

A 1000 gallon double-walled above ground storage tank (AST) containing unleaded gasoline exempt per Rule 284(2)(g)(i). Also, not subject to Rule 703 because less than 2000 gallons.

Two underground storage tanks (UST) and small ASTs containing No.2 fuel oil exempt per Rule 284(2)(d).

Michigan Air Emission Reporting System (MAERS) - 2022 Reporting Year:

The report was audited and total emissions reported are as follows:

AMMONIA - 396.22 LB (0.2 tons)

CO - 257424.63 LB (128.7 tons)

LEAD - 9.22 LB

NO_x - 2062256.54 LB (1031.1 tons)

PM₁₀,FLTRBLE - 9479.05 LB (4.7 tons)

PM₁₀,PRIMARY – 53192.69 LB (26.6 tons)

PM_{2.5},FLTRBL - 1682.00 LB (0.8 tons)

PM_{2.5},PRIMRY - 53158.48 LB (26.6 tons)

SO₂ - 5511521.44 LB (2755.8 tons)

VOC – 28938.29 LB (29.4 tons)

HCl - 11231.00 LB (5.6 tons)

MERCURY - 5.82 LB

Inspection:

There were no odors from any operations and no visible emissions from any stacks or operations observed.

EU001 (PTI 43-20) – Babcock Wilcox pulverized coal-fired boiler:

EU001 was a baseload boiler with a maximum operating capacity of 165 MW which is the high load limit but operated greater than 60% of the time in the low load range around 99 MW. The boiler combusted sub-bituminous from the Powder River Basin in Wyoming. EU001 was retired on November 28, 2022. The Acid Rain Permit No. MI-AR-1832-2015 has been voided. The conditions for EU001 were on PTI 43-20 and not yet incorporated into the ROP. A request to void this PTI will be made in June 2023 and all requirements for EU001 will be removed from the ROP with renewal.

Semi-Annual/Annual ROP reporting for EU001:

Semi-annual reports for MATS and CAM monitoring and deviations were required per ROP No. MI-ROP-B4001-2015, SC VII.6. In the last semi-annual report (2nd semi 2022), no CAM excursion/exceedances, and deviations for EU001 were reported. For the 1st semi 2022, there were CAM excursion/exceedances for COMS monitor downtime.

EUAUXBLR – Cleaver-Brooks CB Packaged Boiler located in the Erickson Station:

The auxiliary boiler is used to keep in-plant temperatures in the range of 60°F. The unit is ignited with liquefied petroleum gas (LPG), and runs on No.2 fuel oil (diesel). This unit is a Cleaver-Brooks CB189-

500 boiler, Cleaver Brooks serial number: L52256, State of Michigan boiler serial number: M307U14M, manufactured in 5/7/1971.

The boiler is permitted as a "limited use" boiler with a federally enforceable heat input restriction. LBWL does not currently think that conversion of the auxiliary boiler into a non-limited use boiler with the retirement of EU001 is needed.

Emission Limits

NA

Material Limits

NA

Process/Operational Restrictions

At all times, the permittee must operate and maintain any affected source (as defined in 40 CFR 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions per SC III.1. To demonstrate this, records of monitoring, operation and maintenance, and inspection of the source is required per SC VI.7. Records of all maintenance and repair activities performed are stored in the electronic work order program. Records are maintained including the date, time, and description of any testing, adjustment, repair, replacement, or preventative maintenance action performed.

The maximum sulfur content of the No. 2 fuel oil shall not exceed 1.0% by weight per SC III.2 and records of the sulfur content are kept according to SC VI.1.

The auxiliary boiler is limited to a heat input of 18,327,672,000 BTU/calendar year per SC III.3. Records of the monthly fuel use and calculations of the actual heat input to EUAUXBLR on a monthly basis to determine compliance are kept as required by SC VI.3 and 4. The LPG is used for boiler ignition purposes and is stored in 150 lb cylinders. Monthly LPG usage is calculated at the end of the calendar year based on the quantity remaining in the cylinder at year's end, which is usually one cylinder used.

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Design/Equipment Parameters,

NA

Testing/Sampling

NA

Monitoring/Recordkeeping

SC VI.1 - An SDS (revision date 6/1/2016) for Marathon Petroleum No. 2 Ultra Low Sulfur Diesel was provided. The SDS shows on page 3 under "3. Composition/Information on Ingredients" that it contains a trace amount of sulfur at less than 0.0015%, less than the 1.0% by weight limit in SC III.2.

SC VI.2 - Cleaver Brooks fuel use records were provided showing monthly usage for a total of 45,551 gallons consumed for the 2022 year and 36,713 gallons consumed from January to March 2023.

SC VI.3.a & b. Actual heat input to EUAUXBLR for each calendar month and gallons of fuel oil and LPG used by EUAUXBLR each calendar month were provided. For 2022, the heat input to EUAUXBLR was 6,286 MMBTU. For April 2022 to March 2023, the heat input to EUAUXBLR was 7795 MMBTU. Compliance with the limited use restrictions (and annual capacity factor of less than or equal to 10 percent) in SC III.3 was demonstrated.

Other Requirements

SC IX.1 Boiler MACT (Subpart DDDDD) – EUAUXBLR is no longer subject and the following information is for historical reference. The initial Notification of Compliance Status for EUAUXBLR was submitted in November of 2015. Tune-ups of the boiler are required per SC III.4 and SC III.5. The initial tune-up was conducted on November 5, 2015 in accordance with the procedures in 40 CFR 63.7540(a)(10)(i) through (vi). The last tune-up and burner inspection was completed on October 23, 2020 and is required every 5 years per the requirements of the Boiler MACT (40 CFR 63.7515(d)).

Area Source Boiler MACT (Subpart JJJJJJ) – EUAUXBLR is subject as a limited use boiler. AQD does not have delegation for this standard. The requirements for 40 CFR 63, Subpart JJJJJJ will be added with the ROP renewal and it will be implemented/enforced through the ROP program.

EUFENGINE – John Deere CI Engine/Clark Fire Pump Emergency Engine:

EUFENGINE is used in instances where there are fire emergencies. However, it is also used for some non-emergencies (pumping water to clean off coal equipment), as evidenced by past reviews of the weekly maintenance operating logs. Maintenance/readiness testing is conducted on a weekly basis. The Model # for this unit is JU6H-UFADM8, Serial # PE6068L239697 with a manufacture date of 6/2013. The John Deere certification sheet for this specific model was provided during the 2017 inspection, which contains the EPA Family Name (DJDXL06.8120) and EPA Certificate Number (DJDXL06.8120-002). EUFPENGINE is listed as a certified engine according to the following EPA website: <https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-engines-and-equipment#large>.

Emission Limits

The NMHC + NO_x and PM emission limits are listed in SC I.1 and 2, and verified using the methods listed in SC V.1, 2, and 3. The requirements per 40 CFR 60, Subpart IIII are being met by a certified engine, and installing and configuring the engine according to the manufacturer's emission-related specifications. Additionally, LBWL is required to operate and maintain the engine according to the manufacturer's emission-related written instructions to maintain the engine's certification, otherwise initial performance tests are required to be conducted.

Material Limits

Diesel fuel containing a maximum sulfur content of 15 ppm (0.0015 wt%) and containing either a minimum cetane index of 40 or a maximum aromatic content of 35 vol% can only be combusted in the engine per SC II.1. The No.2 fuel oil (diesel) that is used in EUAUXBLR is also the fuel oil that is used

in this unit as verified by SDS (revision date 6/1/2016) for Marathon Petroleum No. 2 Ultra Low Sulfur Diesel.

Process/Operational Restrictions

To maintain certification, the engine is to be maintained and operated according to manufacturer's emission-related written instructions per SC III.1. The Fire Pump Operating and Maintenance Record for December 2021 to March 2023 showed weekly test runs, 6-month maintenance completed on 2-22-2022, annual maintenance completed on 2-22-2022, and 2-year annual maintenance completed on 10-24-2022. The Instructions Manual for JU/JW/JX Models for Fire Pump Applications" was reviewed during the 2017 inspection. The maintenance schedule on p. 51 states that air filters and the exhaust system should be checked on a weekly basis; every year air filters should be cleaned, fuel and oil filters should be replaced, and the crankcase ventilation system should be checked; and every 2 years the air filters should be replaced.

This engine is allowed to be run for emergency operations, maintenance and readiness testing, and non-emergency situations per SC III.2, 3, 4, and 5. Non-emergency operations cannot exceed 50 hours per calendar year and is included in the 100-hour allotment for maintenance/readiness testing. Therefore, maintenance and readiness testing operations are allowed up to 100 hours per calendar year if they are recommended by certain entities, such as the manufacturer. The condition that allows them to operate for emergency demand response and for periods with voltage and frequency deviations has been vacated as of May 1, 2015. Records of the operation of EUPENGINE in emergency and non-emergency services, including the hours of operation and the reason the engine was in operation are required to be kept per SC VI.1.

Design/Equipment Parameters

A non-resettable hours meter has been installed on the unit as required by SC IV.1. Total operating hours as of the 3/22/23 inspection was 502.2. All engine operating hours are recorded (via logging the start and stop hours from the meter), as well as the reason for operation. Per page 16 of the Operation and Maintenance Instruction Manual, weekly testing periods should not exceed 30 minutes per test, for a total testing hours of 2 hours per month. The majority of the operational hours were conducted for weekly testing on the engine (maintenance/readiness testing) which are conducted for approximately a half-hour.

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Testing

Per SC V.1 compliance with the emission standards can be demonstrated through the usage of a certified engine. Otherwise, testing will be required (SC V.2 and 3) in order to demonstrate compliance. EUPENGINE is considered a certified engine.

Monitoring/Recordkeeping

SC VI.1 - Records of the operation of EUPENGINE in emergency and non-emergency services (as recorded through the non-resettable hour meter) including the hours of operation of EUPENGINE and the reason the engine was in operation during that time. Records for 2022 show a total of 27.9 hours of which there were 25.1 hours for maintenance/readiness testing, 2.6 hours for non-emergency use, and 0.2 hours for emergency. Records for January 2023 to March 17, 2023 show a total of 5.6 hours of which there were 5.3 hours for maintenance/readiness testing, 0 hours for non-emergency use, and 0.3 hours for emergency. EUPENGINE is meeting the 100-hour limit for non-emergency operations and maintenance.

SC VI.2 Fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil used in EUPENGINE, that contain, at a minimum, the weight % sulfur and either the cetane index or volume % of aromatics in each delivery of diesel fuel oil. SDS and a fuel delivery “Customer Summary Report” from Lansing Ice & Fuel was provided. No.2 fuel oils deliveries listed show 12,500 gallons on 4/20/2021 to 12,000 gallons on 3/6/2023 with a total of 19 deliveries in this time period. The deliveries are ~12,000 gallons each with the largest amount of 12,507 gallons delivered on 1/27/2023.

Other Requirements

SC IX.1 - Complying with NSPS IIII as applicable.

SC IX.2 – Complying with MACT ZZZZ as applicable.

FGASHHANDLING (EUASHDC1, 2, 3, 4, 5 –Fly Ash Handling): Not operating

The LBWL Erickson Station had ash handling at both the power plant and ash handling off of Millett Highway, which is located approximately a quarter mile northeast of the Erickson Station. Ash was transferred from EU001 to the Millett facility through a series of pneumatic pipes to the mass storage building and used as a marketable product or disposed of. There were five (5) baghouse fabric filters in the process designated as follows: EUASHDC1 (main dust collector), EUASHDC2 (load-out silo bin vent), EUASHDC3 (truck unloading dust collector), EUASHDC4 (mass storage dust collector), EUASHDC5 (Erickson fly ash system baghouse).

Table 3. Fly ash dust collectors

Emission Unit	Description	Notes
EUASHDC1	Located between the east and west storage silos at the Millett facility	Still in place
EUASHDC2	Load-out silo bin vent	Still in place
EUASHDC3	Truck unloading chute baghouse, and only operates when there is truck loadout	Still in place
EUASHDC4	Mass storage building dust collector	Still in place
EUASHDC5	Erickson Station fly ash system baghouse	Retired

CAM –_FGASHHANDLING:

A semi-annual report of CAM monitoring and deviations was required per ROP No. MI-ROP-B4001-2015, SC VII.6. In the last semi-annual report (2nd semi 2022), no CAM excursion/exceedances and

deviations for FGASHHANDLING were reported. In the 1st semi 2022, there were CAM excursion/exceedances for EUASHDC1, EUASHDC2 and EUASHDC4 but no VEs were observed, and no monitor downtime.

FGCOLDCLEANERS:

Erickson Station currently has 1 cold cleaner in the maintenance room that was installed in 1998. It is not a heated unit, and has approximately 7.5 square feet of surface area. This unit is exempt from a permit to install per Rule 281(2)(h) because the air/vapor interface is less than 10 ft². The SDS provided shows the solvent used in the cold cleaner has a product name of mineral spirits, a common name of distillates (petroleum), hydrotreated light, and the CAS number is a blend. This demonstrates compliance with the material limits in SC II.1. The vapor pressure for the mineral spirits is listed as 0.03 to 0.06 kPa less than 0.1 psia at 38°C/100°F, which means that a mechanically-assisted cover is not required because the Reid vapor pressure is less than 0.3 psia. The lid on the cold cleaner was closed in compliance with SC IV.3. Compliance with the Section VI. Monitoring/recordkeeping requirements was demonstrated.

1000 gallon double-walled above ground storage tank (AST) – For dispensing unleaded gasoline at the facility. Exempt per Rule 284(2)(g)(i) but subject to 40 CFR 63, Subpart CCCCC for Gasoline Dispensing Facilities (Area Source MACT). A gasoline fuel delivery “Customer Usage Detail” from Lansing Ice & Fuel was provided showing the following deliveries:

2021: 2685.3 gallons

2022: 2842.3 gallons

2023 thus far: 1071.3 gallons

These throughputs indicate that for a gasoline dispensing facility (GDF) that has a monthly throughput of less than 10,000 gallons of gasoline, they must comply with the requirements in [§ 63.11116](#).

ROP Reporting

LBWL is required to submit Excess Emissions and Monitoring Systems Performance Reports and Summary/CAM Reports for the COMS on a quarterly basis for Erickson Station. All reports have been submitted timely and reviewed for compliance to-date, in addition to the annual and semi-annual reporting.

Delta Energy Park (DEP) – PTI 74-18D

Commercial operation for DEP was commenced on May 27 & 28, 2021, and on May 29, 2021, the electrical generating units (EUCTGSC1, EUCTGHRSG2, and EUCTGHRSG3) went into an unplanned outage ending on October 15, 2021. On October 15, 2021, DEP recommenced commercial operations. This caused some issues with the Acid Rain program and monitor certifications. The following is an excerpt from Louis Nichols (EPA) via email:

In regard to the inquiry from Lansing Board of Power and Light (LBP&L) to extend the monitor certification deadline for the two combined-cycle units (DEPC2 and DEPC3) at LBP&L's Delta Energy Park, oris 63259, due to both units being in a outage on the 40 CFR Part 75 compliance date, CAMD is confirming that pursuant to section 40 CFR Part 75.4(d), which is copied below, the rule allows the monitor certification date to be extended 90 unit operating days or 180

calendar days (whichever occurs first) after the date that the unit recommences commercial operation due to the outage. LBP&L has given notice of the planned outage in accordance with 40 CFR Part 75.61(a)(3). In addition, the rule requires LBP&L to report quarterly electronic emissions data for the two units from the original monitor certification date (180 calendar days from the original date of commencing commercial operation as defined in 40 CFR 72.2) in accordance with section 40 CFR 75.4(d)(1), (2), or (3) until either the monitors have completed all the required certification tests or the new monitor certification deadline has expired. Section 75.20(b)(3) allows up to 720 unit or stack operating hours of conditional data prior to completing the RATA and 21 unit operating days of conditional data prior to completing the seven day calibration error test. The agency would like to remind LBP&L of the obligation to notify the agency under section 40 CFR Part 75.61(a)(3) when the units recommence commercial operation at the Delta Energy Park.

EUEMGD – Caterpillar Emergency Generator Set S/N G2N02055:

EUEMGD is a diesel fuel-fired engine emergency generator used to charge the batteries in the uninterruptible power supply battery system and to facilitate operations during idling of the plant. Maintenance/readiness testing is conducted on a weekly basis. On 6/30/2021, the notification of completion of installation and the trial operation for EUEMGD per PTI 74-18A (SC VII.1) was received. Installation of EUEMGD was completed April 6, 2021. The trial operation of EUEMGD was completed on April 6, 2021.

Caterpillar Specifications:

- i. Michigan Caterpillar PO #4600004411**
- ii. Model: 3512C**
- iii. Cylinders: 12**
- iv. Brake HP:**
 - a. 100% Load, 2,206**
 - b. 75% Load, 1,662**
 - c. 50% Load, 1,144**
 - d. 25% Load, 632**
- v. Max kW Output: 1,500**
- vi. Cylinder Displacement (1): 263.4 CU IN or 4.32 L**
- vii. Cylinder Displacement Total: 3161 CU or 51.8 L**
- viii. Crankcase Ventilation Type: to atmosphere**
- ix. EPA Certificate of Conformity:**
 - a. Number: KCPXL78.1NZS**
 - b. Model Year: 2019**
- x. Installation Date: April 21, 2021**
- xi. 40 CFR 63 ZZZZ Notification Date: June 30, 2021**
- xii. Certified Engine Family: KPCXL78.1NZS**

EUEMGD is listed as a certified engine according to the following EPA website:
<https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-engines-and-equipment#large>.

Emission Limits

The NMHC + NO_x, CO, and PM emission limits listed in SC I.1, 2, and 3 are verified because the engine emissions are certified to EPA Stationary Emergency Tier 2.

Material Limits

Diesel fuel containing a maximum sulfur content of 15 ppm (0.0015 wt%) and containing either a minimum cetane index of 40 or a maximum aromatic content of 35 vol% can only be combusted in the engine per SC II.1. The No.2 fuel oil (diesel) is verified by SDS (revision date 6/1/2016) for Marathon Petroleum No. 2 Ultra Low Sulfur Diesel. Verified based on the records provided.

Process/Operational Restrictions

SC III.1 – EUEMGD is restricted to no more than 4 hours per day, except during emergency conditions and required stack testing, and not more than 500 hours per year on a 12-month rolling time period basis as determined at the end of each calendar month. The 500 hours includes the hours as described in SC III.2. Verified based on the records provided.

SC III.2 - This engine is allowed to be run for emergency operations, maintenance and readiness testing, and non-emergency situations per SC III.2. Non-emergency operations cannot exceed 50 hours per calendar year and is included in the 100-hour allotment for maintenance/readiness testing. Therefore, maintenance and readiness testing operations are allowed up to 100 hours per calendar year if they are recommended by certain entities, such as the manufacturer. Records of the operation of EUEMGD in emergency and non-emergency services, including the hours of operation and the reason the engine was in operation are required to be kept per SC VI.3. Verified based on the records provided.

SC III.3 & 4 - The requirements in 40 CFR 60, Subpart IIII are being met by a certified engine, and installing and configuring the engine according to the manufacturer's emission-related specifications. Additionally, LBWL is required to operate and maintain the engine according to the manufacturer's emission-related written instructions to maintain the engine's certification, otherwise initial performance tests are required to be conducted. The Maintenance and Operation Plan for EUEMGD dated July 23, 2021 has been provided and includes the emissions data that it is certified too.

Design/Equipment Parameters

A non-resettable hours meter has been installed on the unit as required by SC IV.1. All engine operating hours are recorded (via logging the start and stop hours from the meter), as well as reason for operation per SC VI.3. Total operating hours on EUEMGD as of the 3/22/23 inspection was 17.0 hours.

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SC IV.2 – The nameplate capacity of EUEMGD, shall not exceed 2,206 HP. The engine has a max output of 1500 kW and brake HP at 100% load of 2,206.

-

Testing

Per SC V.1 compliance with the emission standards is demonstrated through the usage of a certified engine. Otherwise, testing will be required (SC V.1) in order to demonstrate compliance. EUEMGD is considered a certified engine and is not required to stack test.

SC V.2 - Verification of PM10 and PM2.5 emissions from the engine is not necessary due to the insignificant amount of PM10/2.5 emissions and the engine is maintained as required by the manufacturer.

Monitoring/Recordkeeping

SC VI.2 - To maintain certification, the engine is to be maintained and operated according to manufacturer's emission-related written instructions per SC III.3. The DEP Emergency Engine Operating and Maintenance Records for April 2021 to November 2022 showed maintenance for commissioning and troubleshooting. Records for January 2023 to March 2023 showed maintenance for weekly test runs, and annual maintenance completed on 11-8-2022.

SC VI.3 - Records of the operation of EUEMGD in emergency and non-emergency services (as recorded through the non-resettable hour meter) and the reason the engine was in operation during that time were obtained.

Operating hours 2021: Total of 3.1 hours, 3.1 hours for maintenance/readiness testing, 0 hours for non-emergency use, and 0 hours for emergency.

Operating hours 2022: Total of 6.9 hours, 6.9 hours for maintenance/readiness testing, 0 hours for non-emergency use, and 0 hours for emergency.

Operating hours 2023: Total of 1.2 hours, 1.2 hours for maintenance/readiness testing, 0 hours for non-emergency use, and 0 hours for emergency.

The majority of the operational hours were for weekly testing (maintenance/readiness) which are conducted for approximately a half-hour. EUEMGD operated less than 4 hours per day for maintenance/readiness and is below the 100-hour per calendar year limit for non-emergency operations and maintenance. Total operation of EUEMGD has been less than the 500 hours per year (12-month rolling) to date.

SC VI.4 Fuel supplier certification records or fuel sample test data, for diesel fuel oil used that contain, at a minimum, the weight % sulfur and either the cetane index or volume % of aromatics in each delivery of diesel fuel oil. SDS and a fuel delivery "Customer Summary Report" from Lansing Ice & Fuel was provided.

SC VI.5 – For EUEMGD, the monthly records of GHGs as CO₂e were provided for the 12-month rolling period starting December 2021 to March 2023. To date in March 2023, the record showed 9.56 tpy of CO₂e for the 12-month rolling period much less than the 590 tpy limit for GHGs as CO₂e.

SC VI.6 – The record of the manufacturer certification was provided: EPA 2019 Model Year Certificate of Conformity for the Engine Family KCPXL78.1NZS and Certificate Number KCPXL78.1NZS-014.

SC VI.7 – For maintenance activity, the last Michigan CAT PSD PM2 (Inspection Number 10622383) completed on 11/8/2022 was provided. It showed all the checks, replacements of parts (filters, belts, lubricants, etc.), and visual and electrical inspections.

Stack/Vent Restrictions

The stack on EUEMGD appeared in compliance with the permit limits for diameter, minimum height, and unobstructed vertically upward.

Other Requirements

SC IX.1 - Complying with NSPS IIII as applicable.

SC IX.2 – Complying with MACT ZZZZ as applicable.

EUFPRICE – John Deere CI Engine/Clark Fire Pump Emergency Engine:

EUFPRICE is used in instances where there are fire emergencies. Maintenance/readiness testing is conducted on a weekly basis. On 6/30/2021, the notification of completion of installation and the trial operation for EUFPRICE per PTI 74-18A (SC VII.1) was received. Installation of EUFPRICE was completed April 6, 2021. The trial operation of EUFPRICE was completed on April 6, 2021.

Clark / John Deere Specifications:

- i. Model: 6068HF285K,L**
- ii. Cylinders: 6**
- iii. Max BHP / kW Output: 220 / 177**
- iv. Cylinder Displacement (1): 69.16 CU IN or 1.13 L**
- v. Cylinder Displacement Total: 415 CU IN or 6.8 L**
- vi. Crankcase Ventilation Type: to atmosphere**
- vii. EPA Certificate of Conformity:**
 - a. Number: KJDXL06.8120**
 - b. Model Year: 2019**
- viii. Installation and Trial Operation Date: April 6, 2021**
- ix. 40 CFR 63 ZZZZ Notification Date: June 30, 2021**
- x. Certified Engine Family: KJDXL06.8120-003**

EUFPRICE is listed as a certified engine according to the following EPA website:

<https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-engines-and-equipment#large>.

Emission Limits

The NMHC + NOx, CO, and PM emission limits listed in SC I.1, 2, and 3 are verified because the engine emissions are certified and in compliance.

Material Limits

Diesel fuel containing a maximum sulfur content of 15 ppm (0.0015 wt%) and containing either a minimum cetane index of 40 or a maximum aromatic content of 35 vol% can only be combusted in the engine per SC II.1. The No.2 fuel oil (diesel) is verified by SDS (revision date 6/1/2016) for Marathon Petroleum No. 2 Ultra Low Sulfur Diesel. Verified based on the records provided.

Process/Operational Restrictions

SC III.1 – EUFPRICE is restricted to no more than 4 hours per day, except during emergency conditions and required stack testing, and not more than 500 hours per year on a 12-month rolling time period basis as determined at the end of each calendar month. The 500 hours includes the hours as described in SC III.2. Verified based on the records provided.

SC III.2 - This engine is allowed to be run for emergency operations, maintenance and readiness testing, and non-emergency situations per SC III.2. Non-emergency operations cannot exceed 50 hours per calendar year and is included in the 100-hour allotment for maintenance/readiness testing. Therefore, maintenance and readiness testing operations are allowed up to 100 hours per calendar year if they are recommended by certain entities, such as the manufacturer. Records of the operation of EUFPRICE in emergency and non-emergency services, including the hours of operation and the reason the engine was in operation are required to be kept per SC VI.3. Verified based on the records provided.

SC III.3 & 4 - The requirements in 40 CFR 60, Subpart IIII are being met by a certified engine, and installing and configuring the engine according to the manufacturer's emission-related specifications. Additionally, LBWL is required to operate and maintain the engine according to the manufacturer's emission-related written instructions to maintain the engine's certification, otherwise initial performance tests are required to be conducted. The Maintenance and Operation Plan for EUFPRICE dated July 23, 2021 has been provided and includes the rating specific emissions data that it is certified too.

Design/Equipment Parameters

A non-resettable hours meter has been installed on the unit as required by SC IV.1. All engine operating hours are recorded (via logging the start and stop hours from the meter), as well as reason for operation per SC VI.3. Total operating hours on EUFPRICE as of the 3/22/23 inspection was 11.2 hours.

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SC IV.2 – The nameplate capacity of EUFPRICE shall not exceed 315 HP. The engine has a max break HP of 220 (in compliance).

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Testing

Per SC V.1 compliance with the emission standards is demonstrated through the usage of a certified engine. Otherwise, testing will be required (SC V.1) in order to demonstrate compliance. EUFPRICE is considered a certified engine and is not required to stack test.

SC V.2 - Verification of PM10 and PM2.5 emissions from the engine is not necessary due to the insignificant amount of PM10/2.5 emissions and the engine is maintained as required by the manufacturer.

Monitoring/Recordkeeping

SC VI.2 - To maintain certification, the engine is to be maintained and operated according to manufacturer's emission-related written instructions per SC III.3. The DEP Fire Pump Engine Operating and Maintenance Records for April 2021 to March 2023 showed maintenance for commissioning, weekly test runs, 6-month maintenance completed on 2-6-2023, and annual maintenance completed on 9-29-2022.

SC VI.3 - Records of the operation of EUFPRICE in emergency and non-emergency services (as recorded through the non-resettable hour meter) and the reason the engine was in operation during that time were obtained.

Operating hours 2021: Total of 1.2 hours, 1.2 hours for maintenance/readiness testing, 0 hours for non-emergency use, and 0 hours for emergency.

Operating hours 2022: Total of 10.2 hours, 10.2 hours for maintenance/readiness testing, 0 hours for non-emergency use, and 0 hours for emergency.

Operating hours 2023: Total of 5.6 hours, 5.6 hours for maintenance/readiness testing, 0 hours for non-emergency use, and 0 hours for emergency.

The majority of the operational hours were for weekly testing (maintenance/readiness) which are conducted for approximately a half-hour. EUFPRICE operated less than 4 hours per day for maintenance/readiness and is below the 100-hour per calendar year limit for non-emergency operations and maintenance. Total operation of EUFPRICE has been less than the 500 hours per year (12-month rolling) to date.

SC VI.4 Fuel supplier certification records or fuel sample test data, for diesel fuel oil used that contain, at a minimum, the weight % sulfur and either the cetane index or volume % of aromatics in each delivery of diesel fuel oil. SDS and a fuel delivery "Customer Summary Report" from Lansing Ice & Fuel was provided.

SC VI.5 – For EUFPRICE, the monthly calculations of GHGs as CO₂e were provided for the 12-month rolling period starting December 2021 to March 2023. To date in March 2023, the record showed 1.59 tpy of CO₂e for the 12-month rolling period less than the 20 tpy limit for GHGs as CO₂e.

SC VI.6 – The record of the manufacturer certification was provided: EPA 2019 Model Year Certificate of Conformity for the Engine Family KJDXL06.8120 and Certificate Number KJDXL06.8120-003.

SC VI.7 – For maintenance activity, the last annual maintenance (fire pump test) completed on 9-29-2022 was provided. It showed all the checks, replacements of parts (filters, belts, lubricants, etc.), and visual and electrical inspections.

Stack/Vent Restrictions

The stack on EUFPRICE appeared in compliance with the permit limits for diameter, minimum height, and unobstructed vertically upward.

Other Requirements

SC IX.1 - Complying with NSPS IIII as applicable.

SC IX.2 – Complying with MACT ZZZZ as applicable.

EUAUXBOILER

EUAUXBOILER is a natural gas-fired auxiliary boiler rated at 42.3 MMBtu/hr used for HRSG warming and providing steam to the STG seals (not for electric production). On 10/14/2021, the notification for completion of installation and actual startup date for EUAUXBOILER permitted under PTI 74-18A (SC VII.1) was received. Facility construction began December 21, 2018, was completed October 5, 2021 and the boiler was started up on October 6, 2021. The notification also included per 40 CFR Part 60 Subpart Dc, Notification of Startup and 40 CFR Part 63 Subpart DDDDD, Notification of Startup. (40 CFR Part 63 Subpart DDDDD is no longer applicable because the source is no longer a major source of HAPs.)

Tags show the boiler was built in 2019, Mfg. Serial No. 15298

NATURAL GAS BOILER, MFG & TYPE Victory Energy, firetube boiler

BOILER STEAM CAPACITY, LB/HR	36,653
DESIGN PRESSURE, PSIG	150
BURNER MFG AND MODEL	Power Flame Burner, Model no. LNICM11A-G-30, Serial no. 052081127
FUEL HEAT INPUT, MMBTU	5.3 to 42.290
BOILER HEATING SURFACE, SQ/FT	4,172

Emission Limits

SCs I.1 to 6 – Compliance with emission limits is predicted based on the technical information for the boiler and records necessary to demonstrate compliance.

Material Limits

SC II.1 – Only pipeline natural gas fuel is combusted in EUAUXBOILER which complies with the total sulfur content requirements in the condition. The natural gas fuel from the CMS pipeline does not exceed a total sulfur content of 1 grains/100 scf. (See under FGCTGHRSG for further details.)

Process/Operational Restrictions

SC III.1 and 2 – A MAP and a plan that describes how emissions will be minimized during startups, shutdowns, and malfunctions (SUSD) was required to be developed and submitted. A MAP and SUSD was provided dated 10/25/2021 (initial draft). A revised MAP and SUSD dated 4/11/2023 has also been provided and is considered approved.

Design/Equipment Parameters

SC IV.1 – EUAUXBOILER has a heat input capacity of 5.3 to 42.290 MMBtu/hr not in excess of 50 MMBtu/hr.

SC IV.2 – Shall not operate EUAUXBOILER unless the dry low NO_x burners and/or flue gas recirculation system are installed, maintained, and operated in a satisfactory manner. The boiler has O₂ trim and flue gas recirculation. Documentation that specifically states low NO_x burners isn't clear, but apparently that is the only type of burner made now days.

SC IV.3 – Monitors and records the fuel usage rate for EUAUXBOILER on a continuous basis. Verified based on the records provided.

Testing

SC V.1 – Verification of NO_x, CO, VOC, PM₁₀, and PM_{2.5} emission rates from EUAUXBOILER is upon request. Compliance with the emission limits is demonstrated through technical information and the MAP assures maintained in a satisfactory manner to meet emission limits.

Monitoring/Recordkeeping

SC VI.2 - Maintain records of the total amount of natural gas used on a calendar month basis and on a 12-month rolling time period basis. From 10/7/2022 to 3/20/2023, the usage of natural gas was 5475.5 HSCF according to records obtained during the inspection.

SC VI.3 – Monthly records of GHGs as CO₂e were provided for the 12-month rolling period starting 10/7/2022 to 3/20/2023. To date in March 2023, the record showed 34.08 tons of CO₂e for the 6-month period less than the 25,644 tpy limit for GHGs as CO₂e.

SC VI.4 – Maintain records of all information necessary and consistent with the requirements of 40 CFR 60.7(f). Requested records provided and maintained in an acceptable format.

Stack/Vent Restrictions

The stack appeared in compliance with the permit limits for diameter, minimum height, and unobstructed vertically upward.

Other Requirements

SC IX.1 - Complying with NSPS Dc as applicable.

SC IX.2 - MACT JJJJJJ does not apply to a natural gas-fired boiler. (This requirement from the PTI will not be incorporated into the ROP renewal because it is not applicable.)

EUCOOLTWR

On 11/10/2021, the notification regarding completion of installation of EUCOOLTWR on 11/9/2021 per PTI 74-18A (SC VII.1) was received. The five-celled mechanical draft cooling tower has a design flowrate of 55,756 gpm and nameplate design power of 200 HP. At the design flowrate and power, the vender guaranteed drift rate is 0.0005% or less.

Emission Limits

NA

Material Limits

NA

Process/Operational Restrictions

SC III.1 and 2 – An inspection and maintenance program for EUCOOLTWR has been submitted dated 11/19/2021 and is considered approved.

Design/Equipment Parameters

SC IV.1 – EUCOOLTWR has mist/drift eliminators with a vendor-certified maximum drift rate of 0.0005 percent.

Testing

NA

Monitoring/Recordkeeping

SC VI.1 - Maintain records of the vendor's certification required in SC IV.1. The SPX drift letter dated 1/27/2022 was provided.

SC VI.2 - Records of maintenance for EUCOOLTWR were not viewed at this inspection. Inspection and maintenance requirements are listed in the inspection and maintenance program dated 11/19/2021.

Stack/Vent Restrictions

The stacks appeared in compliance with the permit limits for diameter, minimum height, and unobstructed vertically upward.

Other Requirements

NA

EUCTGSC1

EUCTGSC1 is a Siemens model SGT-800 combustion turbine with dry low NO_x burners (DLNB). The combustion turbine is fired exclusively with natural gas. The turbine/generator set is equipped with an electronic control system that provides dependable firing and precise control of combustion/operation along with extensive system diagnostics.

On 6/23/2021, the notification of completion of construction and actual startup date of EUCTGSC1 per PTI 74-18A (SC VII.1) and notifications required by 40 CFR 60, Subparts KKKK & TTTT, Parts 75 & 97 (SCs IX.1 – 5) were received. Actual startup date of EUCTGSC1 was May 27, 2021,

Emission Limits

SCs I.1 - 7 – Compliance with emission limits is based on stack testing and records necessary to demonstrate compliance.

Initial stack testing for NO_x, CO, and VOC was completed on 3/22/2022.

Initial stack testing for PM_{2.5} and PM₁₀ was completed on 9/20/2022.

SCs I.8 - Shall not discharge more than 120 lb CO₂/MMBTU from EUCTGSC1.

Records provided dated 7/21/2022 to 3/31/2023 showed an average of 117.8 lb CO₂/MMBTU on an hourly basis for the timeframe during steady-state operation.

Material Limits

SC II.1 – Only pipeline quality natural gas fuel is combusted in EUCTGSC1 and shall not have a total sulfur content in excess of 1 grain of sulfur per 100 standard cubic feet of gas based on a 12-month rolling time period. The natural gas fuel from the CMS pipeline does not exceed a total sulfur content of 1 grains/100 scf. (See under FGCTGHRSG for further details.)

SC III.2 – Limit of not more than 203,378 MWh/yr net-electric sales on a 3-year rolling average basis. Compliance demonstrated for the timeframe from December 2021 to March 2023.

Process/Operational Restrictions

SC III.1, 2 and 3 – A MAP and a plan that describes how emissions will be minimized during startups, shutdowns, and malfunctions (SUSD) was required to be developed and submitted. A MAP and SUSD was provided dated 10/25/2021 (initial draft). A revised MAP and SUSD dated 4/11/2023 has also been provided and is considered approved.

Design/Equipment Parameters

SC IV.1 – EUCTGSC1 meets a maximum nominal rating of 667 MMBtu/hr. Verification of the heat input rating for the CTG was confirmed to be below the design/equipment parameters.

SC IV.2 – Shall not operate EUCTGSC1 unless the dry low NO_x burners and combustion air inlet filter are installed, maintained, and operated in a satisfactory manner. Verified based on the records provided.

SC IV.3 – Monitor and record the fuel usage rate for EUCTGSC1 on a continuous basis. The device to monitor fuel flow is properly installed and operated. The fuel meter is calibrated annually per the requirements of Part 75 and this information is logged in StackVision (database). The fuel monitor was last calibrated on 10/28/2022.

SC IV.4 – To monitor the NO_x emission rate, the methodology in 40 CFR Part 75, Appendix E is being used and the low mass emissions (LME) methodology in 40 CFR 75.19 (per SC IV.4.c). EUCTGSC1 was below the permitted emission limit for NO_x at the 4 loads tested following LME methodology. Installation of a NO_x CEMS is planned for June 2023 and will replace the LME methodology currently being used. The ECMPS monitoring approval date was 5/27/2021.

Testing

SC V.1 – Verification of CO, VOC, PM10, and PM2.5 emission rates from EUCTGSC1 before December 31, 2022. Stack testing for CO and VOC was completed on 3/22/2022 and compliance demonstrated. Stack testing for PM10 and PM2.5 was completed on 9/20/2022 and compliance demonstrated. The testing of CO, VOC, PM10, and PM2.5 emission rates is required every five years.

SC V.2 – Verification of NO_x emission rates from EUCTGSC1 as required by 40 CFR 60, Subpart KKKK. Stack testing for NO_x was completed on 3/22/2022 and compliance demonstrated. The testing of NO_x emission rates is required every five years unless an alternate testing schedule is approved.

SC V.3 - Verification of NO_x emission rates from EUCTGSC1 utilizing the methodology in 40 CFR Part 75, Appendix E for compliance with the NO_x emission limits as specified in SC IV.4. Compliance was demonstrated with the emission limit for NO_x at the 4 loads tested following LME methodology on 3/22/2022. Installation of a NO_x CEMS is planned for June 2023 otherwise testing for NO_x is to be completed every 20 calendar quarters.

Monitoring/Recordkeeping

SC VI.2 - Maintain records of the total amount of natural gas used on an hourly and monthly basis. The heating value of the natural gas in BTU per cubic foot shall be determined on a monthly basis using a default heating value or one sample taken from the main gas pipeline to the facility on the permittee's property.

Gas quality according to tariff sheet (9/13/2022):

E3.2 Heating Value.

The Gas transported shall have a Total Heating Value Per Cubic Foot of not less than 965 Btu nor more than 1,110 Btu at a base pressure of 14.65 psi and 60 degrees Fahrenheit. Unless otherwise agreed, differences in the thermal value of the Gas transported shall be determined by the Company based on the assumption that the Gas delivered to the customer has a Btu content per Mcf that is the same as the Company's then-current system average Btu content per Mcf which shall be redetermined Monthly.

From 1/2022 to 3/2023, the highest monthly usage of natural gas was 2,376,567.5 HSCFH in August 2022 according to records obtained during the inspection.

SC VI.3 – NOx emissions monitoring. From 1/2022 to 3/2023, the highest monthly NOx emissions were 10.4 tons in August 2022 according to records obtained during the inspection. The NOx emissions are based on 0.084 lb/MMBTU.

SC VI.4 – Monthly records of GHGs as CO₂e were provided for the 12-month rolling periods starting 7/2022 to 3/2023. As of February 2023, the 12-month rolling total was 34,893.86 tons of CO₂e less than the 318,404 tpy limit for GHGs as CO₂e. The highest 12-month rolling total was 45,424.46 tons of CO₂e in September thru November of 2022. Compliance identified.

SC VI.5 – Purchase records of the natural gas combusted in EUCTGSC1 are kept on file as required.

SC VI.6 – Maintain records of all information necessary and consistent with the requirements of 40 CFR 60.7. Requested records provided and maintained in an acceptable format.

- a. Total sulfur content of the natural gas as required by 40 CFR 60.4365(a). Verified.
 - b. Verification of the nominal input rating in ISO, of EUCTGSC1. Verified.
 - e. All records as required by 40 CFR 60.7, including the initial startup notification and performance tests. Verified.
 - f. All calculations necessary to show compliance with the limits contained in this permit. Verified.
-
- a. Net-electric sales as defined in 40 CFR 60.5580. Net-electric sales in March 2023 were 56,333 MWh on a 12-month rolling period (in compliance).

Reporting

SC VII.1 - Excess emissions and monitor downtime reports are submitted in a timely manner.

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Stack/Vent Restrictions

The stack appeared in compliance with the permit limits for diameter, minimum height, and unobstructed vertically upward. The stack height was measured using the range finder at 149.1 ft (+/- 0.9 ft) meeting the permitted height of 150 ft.

Other Requirements

SC IX.1 - Submitted a protocol for low mass emissions methodology for monitoring of NO_x emissions per 40 CFR Part 75, Subpart E.

SC IX.2 - Complying with NSPS KKKK as applicable.

SC IX.3 - Complying with NSPS TTTT as applicable.

SC IX.4 - Complying with CSAPR as specified in 40 CFR Part 97.

SC IX.5 - Complying with Standards of Continuous Emission Monitoring as specified in 40 CFR Part 75 as applicable.

FGCTGHRSG

EUCTGHRSG2 and EUCTGHRSG3 are each Siemens model SGT-800 combustion turbines with dry low NO_x burners (DLNB) coupled with heat recovery steam generator (HRSG) controlled by Selective Catalyst Reduction (SCR) for NO_x and an oxidation catalyst for CO and VOC control. Each combustion turbine is fired exclusively with natural gas. The turbines can be operated in simple cycle and in combined-cycle modes. Each turbine/generator set is equipped with an electronic control system that provides dependable firing and precise control of combustion/operation along with extensive system diagnostics.

On 6/23/2021, the notification of completion of construction and actual startup date of EUCTGHRSC2 (simple cycle mode only) and EUCTGHRSC3 (simple cycle mode only) per PTI 74-18A (SC VII.1) and notifications required by 40 CFR 60, Subparts KKKK & TTTT, Parts 75 & 97 (SCs IX.1 – 4) were received. Actual startup date of EUCTGHRSC2 (simple cycle mode only) was May 27, 2021, and EUCTGHRSC3 (simple cycle mode only) was May 28, 2021. Construction was complete for combined cycle mode for CTGHRSG2 on 11/1/2021 and for CTGHRSG3 on 10/31/2021. Initial startups for combined cycle modes were 11/23/2021 for CTGHRSG2 and 11/29/2021 for CTGHRSG3.

On the day of the inspection, RATA testing was planned. CTGHRSG2 was in startup mod for the RATA and CTGHRSG3 was already operating. There was a steam turbine failure on Monday, March 20, 2023 and it was in 4-day lockout. The plan was to complete the RATAs for simple-cycle operation and the combined cycle operations if the steam turbine was available.

The following snapshot information was collected from the CEMS readouts at ~12:00 (CEMS time):

CTGHRSG2 (simple cycle mode):

NO_x uncorrected – 21.7 ppm

O₂ – 13.846%

CTGHRSG3 (simple cycle mode):

NOx uncorrected – 21.5 ppm

O₂ – 13.776%

Emission Limits

SCs I.1 - 14 – Compliance with emission limits is based on stack testing, CEMS, and records necessary to demonstrate compliance.

Due to a number of mechanical issues and failures, initial stack testing for CO (simple cycle only), VOC, PM_{2.5}, and PM₁₀ keeps getting rescheduled. Per PTI 74-18D, stack testing needs to be completed before 6/30/2023 and once every 5 years hereafter.

Material Limits

SC II.1 – Only pipeline quality natural gas fuel is combusted and it shall not have a total sulfur content in excess of 1 grain of sulfur per 100 standard cubic feet of gas based on a 12-month rolling time period. LBWL has Mostardi Platt take gas samples for analysis. Sampling in late May of 2022 shows total sulfur content ranging 0.084 – 0.363 grains/100 scf. Sampling (at LBWL REO Town) in March of 2020 shows a total sulfur content of 0.174 grains/100 scf. Sampling in November of 2018 shows a total sulfur content of 0.3 grains/100 scf. The natural gas fuel from the CMS pipeline does not exceed a total sulfur content of 1 grains/100 scf. LBWL is still looking into how to do the recordkeeping to the level of detail required in the condition.

Gas quality according to tariff sheet (9/13/2022):

E3.1 Quality.

The Gas delivered to the Company shall meet the following requirements:

- A. Gas shall not contain more than 0.0005 percent (5 ppm) oxygen by volume;
- B. Gas shall be commercially free from objectionable odors, solid or liquid matter, bacteria, dust, gum or

gum-forming constituents which might interfere with its merchantability or cause injury to or interference

with proper operation of the lines, regulators, meters or other appliances through which it flows;

- C. Gas shall not contain more than 0.25 grain of hydrogen sulphide nor more than 0.5 grain of mercaptan

sulfur per 100 cubic feet;

- D. Gas shall not contain more than 5.0 grains of total sulfur (including hydrogen sulphide and mercaptan

sulfur) per 100 cubic feet;

- E. Gas shall not at any time have a carbon dioxide content in excess of two percent by volume;

F. Gas shall not contain an amount of moisture which at any time exceeds seven pounds per million cubic

feet;

G. Gas shall be fully "interchangeable" in accordance with the provisions of AGA Research Bulletin No. 36.

H. The temperature of the Gas shall not exceed 100° F;

I. The hydrocarbon dewpoint of the Gas shall not exceed 30° F at 500 pounds per square inch.

Process/Operational Restrictions

SC III.1, 2 and 3 – A MAP and a plan that describes how emissions will be minimized during startups, shutdowns, and malfunctions (SUSD) was required to be developed and submitted. A MAP and SUSD was provided dated 10/25/2021 (initial draft). A revised MAP and SUSD dated 4/11/2023 has also been provided and is considered approved. The revised MAP includes new inspection procedures for the HRSG ammonia system and NOx tracking log for CTG-HRSG startup. A violation for excess NOx emissions from EUCTGHRSG3 was sent based on the 4th QTR 2022 Excess Emissions and Monitoring Systems Performance Report. With the new procedures to check the HRSG ammonia system and NOx tracking log for startup, issues are identified earlier, and steps taken to prevent excess emissions have been successful. For the 1st QTR 2023 Excess Emissions and Monitoring Systems Performance Report, no excess emissions were reported except for one exceedance of the NOx ppm (24-hr rolling) for 1 hr on EUCTGHRSG3 which was insignificant and not a Rule 912 reportable.

SC III.4 - Total hours for HRSG bypass mode operation for each CTG of FGCTGHRSG shall not exceed 2,000 hours per 12-month rolling. See records in SC VI.6.

SC III.5 - Monitoring plan to quantify the hourly CO₂ mass emission rate (tons/hour) from each CTG/HRSG, in accordance with the applicable provisions in 40 CFR 75.53(g) and (h). Initial monitoring plan was submitted to ECMPS as required under 40 CFR 60, Subpart TTTT.

EUCTGHRSG2 - ECMPS monitoring approval date was 11/23/2021.

EUCTGHRSG3 - ECMPS monitoring approval date was 11/24/2021.

Design/Equipment Parameters

SC IV.1 – Each CTG meets a nominal rated at 667 MMBtu/hr coupled with a 204 MMBTU/hr HRSG and duct burner. Verification of the heat input ratings for the CTG and HRSG were confirmed to be below the design/equipment parameters.

SC IV.2 – Each CTGHRSG is controlled by Selective Catalyst Reduction (SCR) for NOx and an oxidation catalyst for CO and VOC control with separate stacks for simple cycle operation (just the CTG) and combined cycle operations (with the HRSG).

SC IV.3, 4, & 8 – CEMS/CERMS are installed to monitor NO_x and CO emissions, and O₂ meeting the timelines, requirements and reporting detailed in Appendix A and Part 75. The following is the tag information on the CEMS:

EUCTGHRSG2 (simple cycle mode) - NOx Serial No. 1201828227, Model Code. 42iQLS-ABBNA

EUCTGHRSG2 (combined cycle mode) – CO Serial No. 1192744589, Model Code. 48iQ-ABN

EUCTGHRSG2 (combined cycle mode) – NOx Serial No. 1192744583, Model Code. 42iQLS-ABBNA

EUCTGHRSG3 (simple cycle mode) - NOx Serial No. 1201888269, Model Code: 42iQLS-ABBNA

EUCTGHRSG3 (combined cycle mode) – CO Serial No. 1192744590, Model Code. 48iQ-ABN

EUCTGHRSG3 (combined cycle mode) – NOx Serial No. 1192744584, Model Code. 42iQLS-ABBNA

SC IV.5, 6, & 7 – Monitors for natural gas flow rate and gross energy output on a continuous basis are verified. The devices to monitor fuel flow are properly installed and operated. The fuel meters are calibrated annually per the requirements of Part 75 and this information is logged in StackVision (database). The fuel monitors were last calibrated on the following dates:

EUCTGHRSG2 - 10/22/2022

EUCTGHRSG3 - 10/22/2022

Testing

SC V.1, 2, 3, & 4 – Verification of CO, VOC, PM10, and PM2.5 emission rates from EUCTGHRSG2 and EUCTGHRSG3 (simple cycle mode); and VOC, PM10, and PM2.5 emission rates from EUCTGHRSG2 and EUCTGHRSG3 (combined cycle mode) before 6/30/2023 is required. The testing of CO, VOC, PM10, and PM2.5 has been rescheduled for May 16th through 18th. Stack testing is required every five years.

Monitoring/Recordkeeping

SC VI.2 – NOx emissions monitoring provided for hourly, 24-hour rolling average, and 30-day rolling average NO_x concentration and hourly NO_x mass emission records for EUCTGHRSG2 and EUCTGHRSG3; and hourly NO_x emissions, 4-hour rolling average NO_x concentration, and 24-hour rolling mass emission records for EUCTGHRSG2 and EUCTGHRSG3 of FGCTGHRSG operating in HRSG bypass mode. Records sent cover periods from 7/2022 to 3/2023. Records are kept in an acceptable manner.

SC VI.3 – CO emissions monitoring provided for hourly, 24-hour rolling average, and hourly mass emission records for EUCTGHRSG2 and EUCTGHRSG3 operating in combined cycle mode. Records sent cover periods from 7/2022 to 3/2023. Records are kept in an acceptable manner.

SC VI.4 - Monthly records of GHGs as CO₂e were provided for the 12-month rolling periods from 7/2022 to 3/2023. As of February 2023, the 12-month rolling total was 98,301.81 tons of CO₂e for EUCTGHRSG2 and 119,379.2 tons of CO₂e for EUCTGHRSG3 both less than the 318,404 tpy limit for GHGs as CO₂e. The highest 12-month rolling total was 121,479.24 tons of CO₂e for EUCTGHRSG2 in September and October of 2022, and 139,908.63 tons of CO₂e for EUCTGHRSG3 in November of 2022. Compliance identified.

SC VI.5 - Maintain records of the total amount of natural gas used on an hourly and monthly basis. The heating value of the natural gas in BTU per cubic foot shall be determined on a monthly basis using a default heating value or one sample taken from the main gas pipeline to the facility on the permittee's property.

From 7/1/2022 to 3/2023, the average hourly heat input for EUCTGHRSG2 was 227.5 MMBTU/HR and the highest was 668.8 MMBTU/HR. The average hourly heat input for EUCTGHRSG3 was 283.9 MMBTU/HR and the highest was 660.4 MMBTU/HR.

Monthly usage of natural gas for 2022 showed that the highest usage was 3,922,206.4 HSCFH in August 2022 for EUCTGHRSG2 and 3,878,597.2 HSCFH in July 2022 for EUCTGHRSG3.

SC VI.6 – Monthly hours of HRSG bypass mode operation for each unit of FGCTGHRSG. To date in March 2023, the records showed an average of 263 operating hours for EUCTGHRSG2 and 384 operating hours for EUCTGHRSG3 each below the 2,000 hours per 12-month rolling limit.

SC VI.7 & 8 – Monthly records of CO₂ lb/MWh were provided for the 12-month rolling average from 7/2022 to 3/2023. To date in March 2023, the records showed an average of 892.3 CO₂ lb/MWh for EUCTGHRSG2 and 900.7 CO₂ lb/MWh for EUCTGHRSG3 each meeting the 1000 CO₂ lb/MWh limit. The highest 12-month rolling average was 906.0 for EUCTGHRSG2 and 906.7 CO₂ lb/MWh for EUCTGHRSG3 in July 2022. Compliance identified.

SC VI.9 – Maintain records of all information necessary to demonstrate compliance. Requested records provided and maintained in an acceptable format.

- a. Total sulfur content of the natural gas as required by 40 CFR 60.4365(a). Verified.
- b. Verification of heat input capacity. Verified.
- c. Identification, type, and amount of fuel combusted on a calendar month basis. Records sent cover periods from 7/2022 to 4/2023.
- d. Gross energy output on a calendar month basis. Gross energy output was provided for the time period 7/2022 to 3/2023 with the highest output occurring in 7/2022 of 58,113 MW for EUCTGHRSG2 and 57,011 MW for EUCTGHRSG3.

Reporting

SC VII.1 - Excess emissions and monitor downtime reports are submitted in a timely manner.

1st semi-annual 2022 report showed that both EUCTGHRSG2 and EUCTGHRSG3 had excess emissions exceeding the NO_x emission limit of 3 ppmvd at 15% Oxygen based on a 24-hour rolling average for a significant amount of time. A violation notice (VN) was sent on 11/13/2022. There were issues with construction and startup of DEP and adjustments to reporting tools also had to be made (an error was detected which caused several instances where startup emissions were not excluded when determining compliance).

3rd and 4th Quarter 2022 excess emissions and monitor downtime reports were submitted as requested for DEP. (They are required to be submitted for each 6-month period.) There were still issues with excess emissions. A VN was sent on 2/7/2023 for EUCTGHRSG3 which had excess emissions exceeding the NO_x emission limit of 3 ppmvd at 15% Oxygen based on a 24-hour rolling average for a significant amount of time. To address and abate future occurrences, a detailed SCR operation checklist for operators to perform prior to start-ups has been created by the BWL. This checklist is to ensure that valving is correct and identify valve malfunctions prior to the start-up attempt. They have

also created a NOx tracking log that the operators will fill out during unit start-up to ensure NOx emissions are being monitored and a timelier reaction to malfunctions that could lead to exceedances. The checklists and log sheet were included with the 4th Quarter Excess Emissions and Downtime Report for 2022 and have been incorporated into the MAP and SUSD.

1st Quarter 2023 Excess Emissions and Downtime Report was submitted. No excess emissions were reported except for one exceedance of the NOx ppm (24-hr rolling) for 1 hour on EUCTGHRSG3 which was insignificant.

SC VII.2 & 3 – Reports submitted for 40 CFR 60.5555(a) & (b), and Part 75 as required.

Stack/Vent Restrictions

The stacks appeared in compliance with the permit limits for diameter, minimum height, and unobstructed vertically upward. The stack height for EUCTGHRSG2 was measured using the range finder at 149.9 ft (+/- 0.9 ft) meeting the permitted height of 150 ft. The stack height for EUCTGHRSG3 was measured using the range finder at 149.9 ft (+/- 0.9 ft) meeting the permitted height of 150 ft.

Other Requirements

SC IX.1 - Complying with NSPS KKKK as applicable.

SC IX.2 - Complying with NSPS TTTT as applicable.

SC IX.3 - Complying with CSAPR as specified in 40 CFR Part 97.

SC IX.4 - Complying with Standards of Continuous Emission Monitoring as specified in 40 CFR Part 75 as applicable.

FGSPACEHTRS

Four (4) natural gas-fired space heaters.

Emission Limits

NA

Material Limits

SC II.1 – Only pipeline natural gas fuel is combusted in each space heater.

Process/Operational Restrictions

NA

Design/Equipment Parameters

SC IV.1 – maximum design heat input capacity for each space heater in FGSPACEHTRS shall not exceed 3.2 MMBTU per hour.

EUSPACEHEATER1 – max 3.1968 MMBtu/hr

EUSPACEHEATER2 – max 3.1968 MMBtu/hr

EUSPACEHEATER3 – max 3.1968 MMBtu/hr

EUSPACEHEATER4 – max 3.1968 MMBtu/hr

Testing

NA

Monitoring/Recordkeeping

SC VI.1 - Maintain records of manufacturer documentation showing the maximum heat input for each space heater. Documentation is posted on the side of each unit.

Stack/Vent Restrictions

NA

Other Requirements

NA

Summary:

The facility appears to be in compliance with ROP No. MI-ROP- B4001-2015, PTI 74-18D, and all applicable state and federal regulations.

All reporting and records obtained for this compliance inspection are in the AQD file system.



Image 1(11) : Coal conveyors to be removed and ash handling building in background.



Image 2(13) : Delta Energy Park

NAME Julie L. Brunner

DATE 5/9/2023

SUPERVISOR RB