



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Genesee Power Station Limited Partnership, Flint, Michigan

FROM: Charles Hall, Environmental Engineer
AECAB (MN-OH)

THRU: Brian Dickens, Section Chief
AECAB (MN-OH)

TO: File, Genesee Power Station Limited Partnership, Flint, Michigan

BASIC INFORMATION

Facility Name: Genesee Power Station Limited Partnership

Facility Location: G-5310 N. Dort Highway, Flint, Michigan

Date of Inspection: 11 April 2022

EPA Inspectors:

1. Charlie Hall
2. Valeria Apolinario

Other Attendees:

1. Julie Brunner, Michigan Department of Energy, Great Lakes, and Energy
2. Thomas Andreski, General Manager
3. Matt Uren, Operations Manager

Contact Email Address: Thomas.Andreski@cmsenergy.com

Purpose of Inspection: boiler inspection

Facility Type: wood fired boiler for electric power generation

Regulations Central to Inspection: 1) Applicable Michigan SIP rules for carbon monoxide, opacity, oxides of nitrogen, particulate matter, and sulfur dioxide; and 2) Applicable provisions of the National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.

Arrival Time: 13:45 hrs EDT
Departure Time: 17:10 hrs EDT

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☐ Provided Small Business Resource Information Sheet
- ☐ Small Business Resource Information Sheet sent by email after inspection
- ☒ Provided CBI warning to facility

The following information was obtained verbally from the facility representatives.

Process Description:

Genesee Power receives shredded wood waste including storm damaged trees and wooden pallets; and burns the shredded wood in a boiler to generate electricity. The boiler is equipped with a selective non-catalytic reduction (SNCR) system, a mechanical multi-cyclone separator (MMS), and an electrostatic precipitator (ESP). The boiler has a spreader-stoker design and is rated at 523 million British thermal units per hour. It is able to produce 345,000 pounds of steam per hour. Genesee Power also burns tire-derived fuel. It burns natural gas for startup only. The boiler has a spreader-stoker design, is rated at 523 million British thermal unit (mmBTU) per hour, and produces 345,000 pounds steam per hour. A selective non-catalytic reduction system, a mechanical multi-cyclone separator, and an electrostatic precipitator control emissions of nitrogen oxides and particulate matter. Genesee Power monitors carbon monoxide (CO), nitrogen oxides (NO_x), opacity, and sulfur dioxide (SO₂) continuously, and conducts performance tests to measure emissions of acrolein, arsenic, benzo(a)pyrene, beryllium, chromium (total), hydrogen chloride, lead, mercury, particulate matter, and volatile organic compounds. Genesee Power also owns one cold cleaner. See picture 16.

Staff Interview: The boiler was built in 1995. Since 2012, Genesee Power has replaced several sections of the boiler including the sofa panel, superheater, tubular air heater, and generation bank tubes on the hot and cold sides.¹ Genesee Power made the repairs to restore or minimize lost generation time and to improve reliability.

TOUR INFORMATION

EPA Tour of the Facility: Yes.

¹ According to the ROP, the boiler was installed in 1992 and modified in 2011.

Data Collected and Observations:

Inspectors visited the boiler control room where the following observations were recorded from the operators' screens:

Pollutant	Observed during Inspection	Limit	Time Period / Operating Scenario
CO	0.241 lb/mmBTU heat input	0.35 lb/mmBTU heat input	24-hr rolling average as determined each hour that the boiler operates, excluding periods of startup and shutdown
NO _x	0.17 lb/mmBTU heat input	0.20 lb/mmBTU heat input	24-hr rolling average as determined each hour that the boiler operates, excluding periods of startup and shutdown
NO _x	81 lbs/hr	104.6 lbs/hr	24-hr rolling average as determined each hour that the boiler operates
Opacity	1.9%	10%	6-minute average except one 6-minute average per hour of not more than 20%
SO ₂	9.4 lbs/hr	35.4 lbs/hr	24-hour rolling average as determined each hour the boiler operates

Inspectors also viewed the facility's electrostatic precipitator and its associated control panel. See pictures 11 and 12. Although Genesee Power periodically monitors the ESP's primary and secondary voltage and its spark rate, the Renewable Operating Permit (ROP) does not require Genesee Power to establish and comply with specific operating parameter limits for the ESP. The ROP also does not require Genesee Power to establish and comply with operating parameter limits pertaining to the MMS, SNCR, or steam load.

The ROP limits Genesee Power's tire-derived fuel (TDF) usage to 20 tons per calendar day. At the inspector's request, Genesee Power provided TDF records from January 1, 2019, to May 31, 2022. Between January 1, 2019, and June 2, 2022, the daily TDF usage did not exceed 20 tons.

The ROP and 40 C.F.R. § 63.7540(a)(10) require Genesee Power to conduct an annual boiler tune-up. At the inspector's request, Genesee Power provided the reports for the 2018 through 2022 boiler tune-up.

The ROP and 40 C.F.R. § 63.7521 require Genesee Power to develop a site-specific fuel monitoring plan. At the inspector's request, Genesee Power provided a copy of its fuel monitoring plan.

On May 20 and 21, 2020, Genesee Power measured emission concentrations of particulate matter, mercury, lead, chromium, arsenic, beryllium, acrolein, benzo(a)pyrene, volatile organic compounds, and hydrogen chloride. The follow table summarizes the results and associated permit limits:

Parameter	Average Result	Permit Limit	Unit
Particulate Matter	0.0073	0.03	lb/mmBTU heat input
	1.7	15.7	lbs/hr
Mercury	4.5E-7	9.0E-6	lb/mmBTU heat input
	0.00023	0.0047	lbs/hr
Lead	0.00046	0.5	lbs/hr
Chromium	0.0017	0.5	lbs/hr
Arsenic	0.00070	0.0265	lbs/hr
Beryllium	<0.000017	0.006	lbs/hr
Acrolein	<0.060	0.053	lbs/hr
Benzo(A)Pyrene	<0.0037	0.0053	lbs/hr
Volatile Organic Compounds	5.9	15.7	lb/mmBTU heat input as carbon
	0.011	0.03	lbs/hr
Hydrogen Chloride	0.0071	0.09	lb/mmBTU
	3.8	47.1	lbs/hr

Genesee Power has one cold cleaner. See picture 16. The air/vapor interface of the cold cleaner is less than 10 square feet and is equipped with a cover. The cold cleaner is equipped with a device for draining cleaned parts. It uses a cleaning solvent with a vapor pressure below 1 millimeter of mercury at 68 degrees Fahrenheit (°F).²

Photos were taken during the inspection. They are copied into Appendix A.

Field Measurements were not taken during the inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

During the inspection, I noted that I would send an e-mail to request the following documents:

- Results of the most recent performance test for acrolein, arsenic, benzo(a)pyrene, beryllium, chromium (total), hydrogen chloride, lead, mercury, particulate matter, and volatile organic compounds
- Fuel Procurement and Monitoring Plan
- Documentation of the cleaning solvent's vapor pressure

After the inspection, I requested TDF usage records and boiler tune up reports.

After the inspection, Julie Brunner, Michigan EGLE, requested the following documents, which Genesee Power has now provided to Michigan EGLE and to U.S. EPA:

² The ROP requires the cleaning solution's vapor pressure to be less than 0.3 pounds per square inch absolute at 120°F which is 15.5 mm Hg.

- EU-BOILER
 1. The records of the monthly and 12-month rolling SO₂ emissions from January 2020 to February 2022. This record is required to be kept in accordance with Special Condition (SC) VI.5.
 2. The records of the daily wood and TDF burnt for October 2021 through March 2022. The records are required to be kept in accordance with SC VI.8 and 9.
 3. The records of the monthly and 12-month rolling heat input capacity by fuel type from January 2020 to February 2022. The record is required to be kept in accordance with SC VI.8.
 4. For February and March 2022, the following records, kept in accordance with SC VI.2, SC VI.3, SC VI.4, SC VI.6, and SC VI.7:
 - Opacity - Hourly and 24-hour block (calendar day);
 - CO - Hourly and 24-hour rolling average in lb/MMBtu and pph;
 - CO - 30-day rolling average in ppmvd @ 3% O₂
 - NO_x - Hourly and 24-hour rolling average in lb/MMBtu and pph;
 - SO₂ - Hourly and 24-hour rolling average in pph
 5. The records of the Operations Daily Report including MW produced, capacity, and urea usage for February and March 2022.
- EUFIREPUMP
 1. The record the total hours of operation for the calendar year 2021, recorded through the non-resettable hours meter, including how many hours were spent for emergency operation, what classified the operation as emergency and how many hours are spent for non-emergency operation. The records are required to be kept in accordance with SC VI.6.
 2. Records of the maintenance conducted for the calendar year 2021 to demonstrate that the engine and after-treatment control device (if any) were operated and maintained according to the developed maintenance plan per SC VI.5.
 3. The record that the fuel oil used meets the NRLM diesel fuel standard per SC II.1.
- EUEMERGEN
 1. The record the total hours of operation for the calendar year 2021, recorded through the non-resettable hours meter, including how many hours were spent for emergency operation, what classified the operation as emergency and how many hours are spent for non-emergency operation. The records are required to be kept in accordance with SC VI.4.
 2. Records of the maintenance conducted for the calendar year 2021 to prevent malfunction, and records of actions taken during periods of malfunction (if any) to minimize emissions, including corrective actions per SC VI.2 and 3.
 3. The record that the fuel oil used meets the NRLM diesel fuel standard per SC II.1.
- FG-COLD CLEANER (EUPARTSWASHER)
 1. The Safety Data Sheet (SDS) of the solvent used and the service provider for the unit. It was Safety-Kleen at my last inspection.

Concerns:

In light of the number of boiler projects, I raised a concern that Genesee Power may have reconstructed the boiler. If so, the boiler would become subject to the emission standards for new sources.

DIGITAL SIGNATURES

Report Author:

CHARLES HALLDigitally signed by CHARLES
HALL

Date: 2022.06.06 13:56:09 -05'00'

Section Chief:

Brian Dickens

Digitally signed by Brian Dickens

Date: 2022.06.06 16:09:18
-05'00'

Facility Name: Genesee Power Station Limited Partnership
Facility Location: G-5310 N. Dort Highway, Flint, Michigan
Date of Inspection: 11 April 2022
APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Valeria Apolinario	2. Archival Record Location: https://usepa.sharepoint.com/sites/R5_Work/r5erc/ecad/AECAB%20Library/Forms/AllItems.aspx?id=%2Fsites%2FR5%5FWork%2Fr5erc%2Fecad%2FAECAB%20Library%2FEnf%5FGenesee%20Power%5FMI%5F22%2FPictures%2FOneDrive%5F2022%2D04%2D15%2FPhotos%2DGenesee%204%5F11%5F22&viewid=5f882290%2D049a%2D44b7%2D8ccd%2D595d38b04fcb 3. Camera: #3 Canon 360HS Digital Camera
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Image Number	Date and Time	Description of Image	Photo
1	04/11/2022	Wood shredder for oversize pieces	

Facility Name: Genesee Power Station Limited Partnership
Facility Location: G-5310 N. Dort Highway, Flint, Michigan
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Image Number	Date and Time	Description of Image	Photo
2	04/11/2022	Conveyors to magnetic sorter building	 A photograph showing two large, parallel, rusted metal conveyors running along a concrete wall, leading towards a building. The conveyors are made of large, cylindrical metal sections with visible rust. They are flanked by yellow safety railings. The background shows industrial structures, including a large building with a corrugated metal roof and various pipes and ladders.

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Image Number	Date and Time	Description of Image	Photo
3	04/11/2022	Portion of wood pile with bulldozer	 A photograph showing a large, conical pile of brown wood chips or mulch. A yellow bulldozer is positioned on top of the pile, facing away from the camera. In the background, there is a line of bare trees under a grey, overcast sky. To the right of the main pile, a red excavator is partially visible, working on another pile of material.

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Image Number	Date and Time	Description of Image	Photo
4	04/11/2022	Wood feed	 A photograph of an industrial facility, likely a wood processing plant. The scene shows a large, dark, metallic structure with a yellow safety railing in the foreground. A blue trash can is visible near the railing. The background features a corrugated metal wall and various pipes and structural elements. The lighting is dim, with some bright spots from overhead lights.

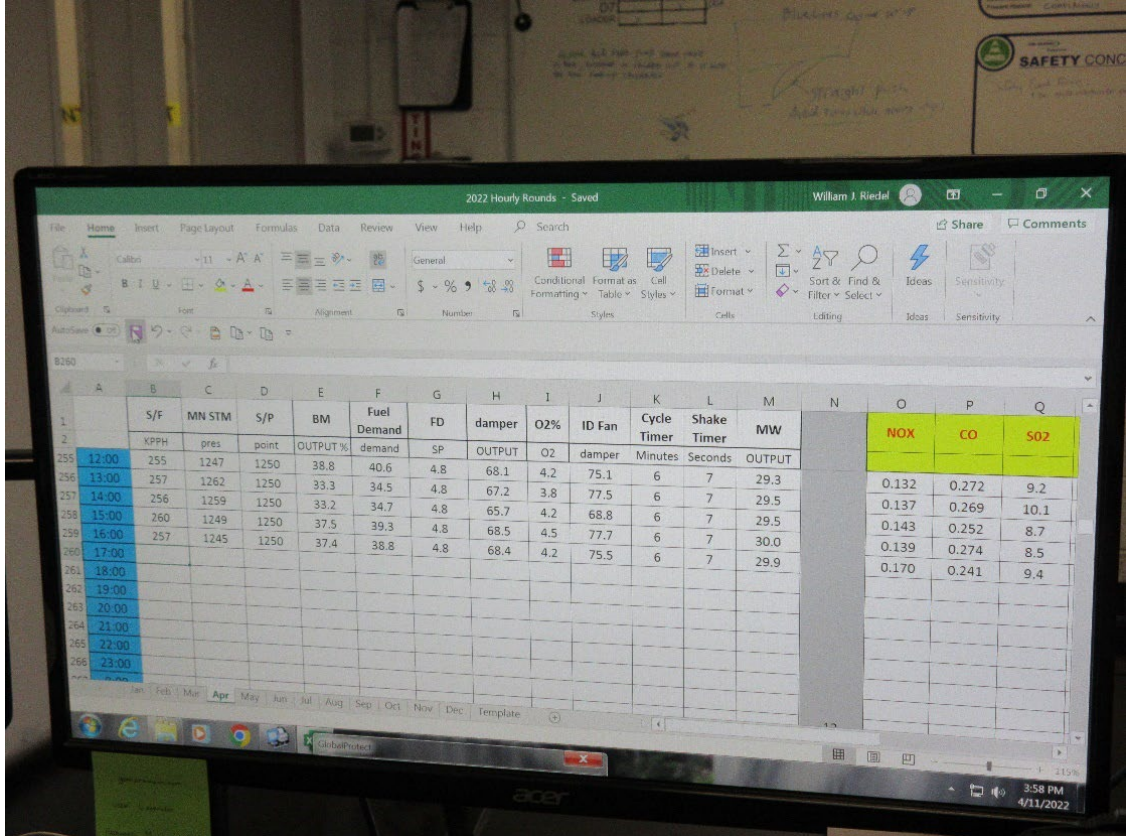
Facility Name: Genesee Power Station Limited Partnership
Facility Location: G-5310 N. Dort Highway, Flint, Michigan
Date of Inspection: 11 April 2022

Image Number	Date and Time	Description of Image	Photo
5	04/11/2022	Top section of boiler	

Facility Name: Genesee Power Station Limited Partnership
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Date of Inspection: 11 April 2022

Image Number	Date and Time	Description of Image	Photo
6	04/11/2022	Urea feed ports (one is behind the hand rail)	

Facility Name: Genesee Power Station Limited Partnership
Facility Location: G-5310 N. Dort Highway, Flint, Michigan
Date of Inspection: 11 April 2022

Image Number	Date and Time	Description of Image	Photo
7	04/11/2022 15:58	Operator's screen with Hourly Records for April 11, 2022	

Facility Name: Genesee Power Station Limited Partnership
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Image Number	Date and Time	Description of Image	Photo																														
8	04/11/2022	Operator's Screen with CO, NOx, SO2, and opacity data	 The screenshot displays a software interface for monitoring environmental data. On the left is a navigation tree with categories like 'Tools', 'Calibrations', and 'Maintenance'. The main area features two line graphs: 'NOx lb/MMBtu, 15M' and 'CO lb/MMBtu, 15M', both showing data from 12:00 to 15:00. To the right of the graphs are two summary tables. The first table shows 1-minute, 1-hour, and 24-hour averages for NOx, CO, and SO2 in lb/MMBtu and lb/hr. The second table shows 1-minute and 5-minute averages for Opacity. Below these are sections for 'CALIBRATIONS' and 'MAINTENANCE' with various control buttons. <table><tr><th></th><th>1-Minute</th><th>1-Hour</th><th>24-Hour</th></tr><tr><td>NOx lb/MMBtu</td><td>1.55</td><td>1.70</td><td>1.55</td></tr><tr><td>CO lb/MMBtu</td><td>6.80</td><td>2.41</td><td>2.45</td></tr><tr><td>SO2 lb/hr</td><td>13.5</td><td>9.4</td><td>9.3</td></tr><tr><td>NOx lb/hr</td><td>77.0</td><td>81.0</td><td>51.3</td></tr><tr><td>CO lb/hr</td><td>338.0</td><td>115.2</td><td>84.5</td></tr></table> <table><tr><th></th><th>1-Minute</th><th>5-Minute</th></tr><tr><td>Opacity</td><td>1.7</td><td>1.9</td></tr></table>		1-Minute	1-Hour	24-Hour	NOx lb/MMBtu	1.55	1.70	1.55	CO lb/MMBtu	6.80	2.41	2.45	SO2 lb/hr	13.5	9.4	9.3	NOx lb/hr	77.0	81.0	51.3	CO lb/hr	338.0	115.2	84.5		1-Minute	5-Minute	Opacity	1.7	1.9
	1-Minute	1-Hour	24-Hour																														
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	1-Minute	5-Minute																															
Opacity	1.7	1.9																															

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Image Number	Date and Time	Description of Image	Photo
9	04/11/2022	Operator's Screen with Urea Feed Information	

Facility Name: Genesee Power Station Limited Partnership
Facility Location: G-5310 N. Dort Highway, Flint, Michigan
Date of Inspection: 11 April 2022

Image Number	Date and Time	Description of Image	Photo
10	04/11/2022	Boiler's Construction Plate	

Facility Name: Genesee Power Station Limited Partnership
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Date of Inspection: 11 April 2022

11	04/11/2022	CEM Shack and Duct to ESP Inlet	
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Facility Name: Genesee Power Station Limited Partnership
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Date of Inspection: 11 April 2022

Image Number	Date and Time	Description of Image	Photo
12	04/11/2022	Display of ESP Operating Parameters	

Facility Name: Genesee Power Station Limited Partnership
Facility Location: G-5310 N. Dort Highway, Flint, Michigan
Date of Inspection: 11 April 2022

Image Number	Date and Time	Description of Image	Photo
13	04/11/2022	CEM Data Controller	

Facility Name: Genesee Power Station Limited Partnership
Facility Location: G-5310 N. Dort Highway, Flint, Michigan
Date of Inspection: 11 April 2022

Image Number	Date and Time	Description of Image	Photo
14	04/11/2022 16:15	COM Data Controller	

Facility Name: Genesee Power Station Limited Partnership
Facility Location: G-5310 N. Dort Highway, Flint, Michigan
Date of Inspection: 11 April 2022

Image Number	Date and Time	Description of Image	Photo
15	04/11/2022	SO ₂ CEM Data Controller	

Facility Name: Genesee Power Station Limited Partnership
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Image Number	Date and Time	Description of Image	Photo
16	04/11/2022	Cold Cleaner	 A photograph of a red metal cold cleaner machine. The machine is open, revealing its interior. The lid is hinged and has a latch. On the inside of the lid, there are two labels: one that says "CUSTOMER OWNED MACHINE SERVICE" and another that says "POSSIBLE FLAMMABLE LIQUID NO SMOKING". The interior of the machine contains various tools and components, including a brush and a metal plate. The machine has a "Clarke" logo on the front. The background shows a concrete wall and some pipes.