

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

N126648035

FACILITY: HILLMAN POWER CO		SRN / ID: N1266
LOCATION: 750 E. PROGRESS ST, HILLMAN		DISTRICT: Gaylord
CITY: HILLMAN		COUNTY: MONTMORENCY
CONTACT: Chase Shepherd , Interim Plant Manager (as of 8/16/18)		ACTIVITY DATE: 02/28/2019
STAFF: Becky Radulski	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: scheduled inspection and records review		
RESOLVED COMPLAINTS:		

AQD Staff traveled to N1266 Hillman Power on February 28, 2019 to conduct a Full Compliance Evaluation (FCE) FY19 scheduled inspection to determine compliance with MI-ROP-N1266-2015 (issued January 8, 2015). The facility is located in an Industrial Park in the village of Hillman. This is a Title V source subject to the Renewable Operating Program.

Present for the inspection were:

Chase Shepherd, Hillman Plant Manager
Bob Havermahl, Hillman Operation/Environmental Manager
Shawn, Hillman Control Room Operator
Becky Radulski, AQD Gaylord Field Office

N1266 Hillman Power is a base load power plant. At full load the facility operates at 175,000 lb/hr steam load. The facility utilizes wood waste, tire derived fuel (TDF) and natural gas to produce electricity, and has a maximum heat input of 300 MMBTU/hr. The boiler has the following control equipment – electrostatic precipitator (ESP), multiclones, Selective Non-Catalytic Reduction (SNCR).

This facility is a base load power generator and operates at the same MW each day, as opposed to a peaking plant that varies its load based on need. The facilities 30-year contract was up in 2015. The facility has had several contract extensions but continues to operate without contract.

REGULATORY DISCUSSION

The facility is subject to MI-ROP-N1266-2015, which was issued January 8, 2015. The facility has the potential to emit over 100 tons per year of each particulate matter (PM), nitrogen oxides (NOx), carbon monoxide (CO) and sulfur dioxide (SO2) (the staff report does not currently list PM and can be added during the next renewal).

The facility is not major for HAPs.

EUBOILER uses a multiclone and ESP to control PM. EUBOILER is subject to Compliance Assurance Monitoring (CAM) for PM because the potential to emit for PM is over 100 tons per year uncontrolled. The facility uses a Continuous Opacity Monitor (COM) to monitor opacity and as an indicator that the multiclones and ESP are operating properly.

EUBOILER uses a SNCR to control NOx. EUBOILER is exempt from CAM requirements for NOx because the Continuous Emission Monitors (CEMs) meet the CAM exemption for continuous compliance determination method.

EUBOILER is subject to 40 CFR, Part 60, Subpart Db – Industrial, Commercial-Institutional Generating Units.

EUBOILER is subject to 40 CFR, Part 63, Subpart JJJJJ (6J) – Industrial, Commercial and Institutional Boilers Area Sources. The AQD is not delegated the regulatory authority for this area source MACT.

The facility is subject to Consent Order AQD 6-2015, issued March 25, 2015. The consent order requires that Consent Order No. 6-2015 remains in full force and effect for a period of three years; thereafter the facility may request termination of the consent order to the AQD Chief. The current status of the consent order was discussed with Mr. Shepherd. Since Hillman has met the conditions of Consent Order 6-2015, they may request the consent order be terminated using the process outlined in Condition 18 of Consent Order 6-2015. Mr. Shepherd indicated Hillman would begin the termination process utilizing the steps outlined in this condition.

INSPECTION NOTES

While onsite, Radulski met with Bob Havermahl and Chase Shepherd. Mr. Shepherd became the Interim Plant Manager when former Plant Manager Doug Audette left the facility. Mr. Shepherd became Plant Manager on December 5, 2018. Mr. Havermahl indicated he may have around 1 year left before retiring, and will be working to get Mr. Shepherd up to speed on his environmental responsibilities.

The facility was operating during the inspection. Steam was present from the boiler exhaust stack and cooling towers. The temperature was approximately 15 degrees F, light snow. The parking lot was snow covered due to several recent snowfall events. The facility walkthrough included the boiler and ash storage areas.

Hillman Power is a baseload plant – not on dispatch. Full load is 175,000 lb/hr steam load. The facility typically produces around 20 MW and uses around 2 MW; during the inspection the facility was producing 19.3 MW, sending 17.4 MW to the utility.

Mr. Havermahl and Mr. Shepherd explained that due to the contract negotiations, work that needs to be done on the boiler is postponed until a contract is renewed. The lower boiler tubes need to be replaced. To avoid the higher heat in the lower part of the boiler, the facility is running at a lower load – generally around 170,000 lb/hr steam load, and using less tire derived fuel (TDF) as the TDF sits on the grates or falls through a burner longer and hotter than wood. Once a contract renewal is in place, the tubes in the lower part of the boiler would be replaced.

Wood fuel is received from saw mills, loggers, brush and pallets. No green treated wood. The wood pile is currently high. The facility tries to keep around 30-40 days out on wood fuel supply; currently the facility is at 56 days out. Wood chips are delivered to the facility by semi truck. The chips are fed to conveyors where large chunks of wood are screened out. A TDF conveyor dumps onto the wood conveyor belt prior to entering the building. There is an over-pile where excess wood/tdf can be dumped as necessary. The combination is pushed back into the woodpile.

TDF throughput is based on SO₂ readings from the CEM, a balance between emissions and not damaging the boiler. Weather also impacts the amount of TDF needed – wetter wood chips require more TDF. The TDF feed rate was viewed in the control room – the feed rate is

the conveyor speed, which was set at 25.0 during the inspection. The facility currently has 945.83 tons of TDF on hand. The pile was contained on a concrete pad designated for TDF storage.

Urea is added in the SNCR to control NO_x, and the feed adjusted to fit the NO_x limits. Urea feed levels during the inspection were set to 25%.

The ESP was operating during the inspection. Readings were taken from the digital readouts. During the inspection the readings were:

Field	Primary Voltage	Spark Rate
Inlet	165	43
Middle	188	14
Outlet	212	5

Mr. Havermahl explained that they like to see the first cell do the most work. A higher primary voltage (V) indicates working the least, low V indicates working harder. The opposite is true for the spark rate – high number is working hard, lower number is working least. In properly operating scenario, the first unit will have the lower V and higher spark rate.

SPECIAL CONDITIONS AND RECORDS REVIEW

SOURCEWIDE TABLE

III.1, VI.1 Requires a program for fugitive dust control, records of control measures - The facility has a Fugitive Dust Control Plan, which was reviewed with the facility. No visible emissions noted in the parking lot area, which was to be expected as there was snow present in the parking lot. No dust visible in the fuel area. Fuel handler dust logs were reviewed – zero emissions noted, and dust suppressant was applied May 16, 2018.

III.2 Requires a Malfunction Abatement Plan – the facility has a plan and it was reviewed. The MAP discusses the CEMs, ESP, SNCR, Dust Collector, Boiler and Start Up/Shut Down.

EUBOILER

SC I.1 limits opacity to 10%. The stack was viewed prior to entering the facility. There was a steam plume but the opacity appeared to be zero. Opacity levels were viewed while in the control room. During the inspection opacity was reading 2.07% on the COM.

SC I.2-4 limits PM – stack test on February 3 2015, results show compliance with PM limits. Prior testing in February 2014 showed facility had failed PM testing, resulting in CO 6-2015 mentioned above. 2015 results:

PM Limits	ROP Limit	Test result
SC I.2, grains per dry standard cubic foot	0.014	0.0096
SC I.3, lb/MMBTU heat input	0.1	0.017
SC I.4, pounds/hr	7.8	5.29

SC I.5 limits SO₂ to 100 ppmv, dry corrected to 7% O₂, 24 hr block average. Records for January 2019 were reviewed, highest reading for January was 51.72, which is below the limit. This information is also provided and reviewed as part of the facility's quarterly reports.

SC I.6 limits SO₂ to 50 pounds/hr, based on a 24 hr daily average. Records for January were reviewed, highest reading for January was 31.00, which is below the limit. This information is also provided and reviewed as part of the facility's quarterly reports.

SC I.7 limits SO₂ to 100 pounds/hr, based on 3 hr block average. Data was reviewed in the control room. A report was viewed for February 26, showing the highest 3 hr block average to be 9.4 pounds/hr, which is below permitted limits

SC I.8 limits SO₂ to 200 tons/yr. Records for January were reviewed; the highest 12 month rolling time period for January was 59.29 tons, which is below the limit. This information is also provided and reviewed as part of the facility's quarterly reports.

SC I.9 limits SO₂ to 9.0 ppmv, dry at 7% O₂, 24 hr block average – WOOD FIRING ONLY. This condition was previously discussed with Doug Audette, and again discussed during the inspection with Mr. Havermahl. Hillman does not operate in this scenario (TDF is used in addition to wood), however it would be tracked by the CEMs and printed on daily records if the situation happened. Zero hours are being reported in the past 12 months.

SC I.10 limits SO₂ to 5.5 pounds/hr – WOOD FIRING ONLY. This condition was discussed with Doug Audette, and again discussed during the inspection with Mr. Havermahl. Hillman does not operate in this scenario (TDF is used in addition to wood), however it would be tracked by the CEMs and printed on daily records if the situation happened. Zero hours are being reported in the past 12 months.

SC I.11 limits NO_x to 130 ppmv, dry corrected to 7% O₂, 30 day rolling average. Records for January were reviewed; highest reading for January was 114.41 ppmv, which is below the limit. This information is also provided and reviewed as part of the facility's quarterly reports.

SC I.12 limits NO_x to 60 pounds/hr, 30 day rolling average. Records for January were reviewed; highest reading for January was 49.55 ppmv, which is below the limit. This information is provided and reviewed as part of the facility's quarterly reports.

SC I.13 limits NO_x to 260 tons/yr. Records for January were reviewed; highest reading for January was 196.12 tons, which is below the limit. This information is provided and reviewed as part of the facility's quarterly reports.

SC I.14 limits CO to 140 lb/hr average during startup/shutdown/malfunions. CEMs are operated during startup/shutdown/malfunions and records are compared to limits. Records were viewed on site.

SC I.15 limits CO to a variable limit as described in Appendix 7. CEMs are operated during startup/shutdown/malfunions and records are compared to limits. Records were viewed on site.

SC I.16 limits CO to 120 lb/hr, 24 hr daily average. Records for January were reviewed; highest reading for January was 105.89, which is below the limit. This information is also provided and reviewed as part of the facility's quarterly reports.

SC I.17 limits CO to 440 tons/yr. Records for January were reviewed; highest reading for January was 332.85 tons/yr, which is below the limit. This information is provided and reviewed as part of the facility's quarterly reports.

SC I.18-22 limits PM – stack test February 11-13 2014, results show compliance with PM limits.

Pollutant	ROP Limit	Test result
SC I.18 VOC, ppmv, dry corrected to 7% O ₂	57.3	4.18
SC I.19 VOC, lb/hr	7.0	2.09
SC I.20 sulfuric acid mist, ppmv, dry corrected to 7% O ₂	5.0	0.43
SC I.21 sulfuric acid mist, lb/hr	4.6	0.48
SC I.22, Benzo(a)pyrene, lb/hr	0.0006	2.85 E-06

SC II.1, VI.1 limits material usage for TDF to 5000 lb/hr, based on 24 hr average. Records were reviewed onsite, and are below the permitted limit.

SC II.2, VI.1 limits material usage for TDF to 20,000 tons/yr based on calendar year. Records were reviewed onsite, and are below the permitted limit.

SC II.3 limits fuel combusted to not contain creosote, pentachlorophenol or copper chromium arsenate (treated lumber). No treated lumber was viewed on the wood piles. Samples are analyzed by Hillman as required, results were reviewed, no issues.

SC III.1 requires the multiclones, electrostatic precipitator (ESP), and Selective Non-Catalytic Reduction systems to be installed and operating properly. These devices were all in place, appeared to be in good condition and operating properly.

SC III.2 requires firing EUBOILER from a cold start with natural gas. Facility confirmed this is the procedure.

SC III.3-5 require proper installation, calibration, maintenance and operation of the COM, CEM and O₂ device – all are in place in the CEM Building and appear to be in proper operating condition.

SC III.6 requires the facility to follow the Fuel Operations Description, Procedure and Work Practices in Appendix 3 of the ROP. Facility appears to follow each practice. TDF is limited to 1,200 tons storage on site at one time, the facility was in compliance during the inspection.

SC V.1-4 requires testing every 5 years for SC I.2, I.3, I.4, I.18-22; testing results were discussed with each SC above. Testing was taking place February 27-28, 2019, which is 5 years from the previous test.

SV V.5 requires the facility to test TDF and Wood samples quarterly. Samples were viewed with Mr. Havermahl at the facility. Results from the tests are submitted quarterly. Mr. Havermahl indicated that occasionally the TDF sample analysis are not returned to Hillman in time for the quarterly report to be submitted to AQD. During those occurrences, Hillman submits the quarterly report, lists the missing TDF report as a deviation, then submits the TDF report once it is received.

SV V.6 and 7 require the RATA – a RATA took place on 8/16/18. Results for that RATA indicate the facility passed for all pollutants.

VI.3 and 4 requires the annual capacity factor be determined for wood, natural gas and TDF at the end of each calendar month. The annual capacity factors were reviewed onsite.

VI.5-13 refer to the use of CEMs and COM at the facility. The CEMs and COM were operating during the inspection. The CEMs are used to calculate emissions as demonstrated above. Exceedances are reported to AQD and reviewed on a quarterly basis.

VII.1-15 refers to the reporting requirements. As mentioned above, records are provided quarterly and semiannually as required. Reports are reviewed as they are received. Testing protocols and results have been submitted as required.

VIII.1 requires the stack have a maximum diameter of 72 inches and a minimum height of 142 feet. The stack appeared to meet these conditions. It exhausts unobstructed vertically upward as required by the permit.

IX.1-3 defines startup, shutdown and malfunction.

IX.4 requires a startup, shutdown and malfunction plan. As mentioned above in the SOURCEWIDE table evaluation, the facility has a plan and is currently updating it.

IX.5 indicates facility needs to notify AQD in event of a failure to achieve compliance.

IX.6 requires facility to comply with CAM.

EUMACT JJJJJ

EUBOILER is subject to 40 CFR, Part 63, Subpart JJJJJJ – Industrial, Commercial and Institutional Boilers Area Sources – AQD is not delegated this MACT.

FGMATLHANDLING

SC I.1 and V.1 - There is an opacity limit of 5% for the fuel handling equipment, fuel storage piles and boiler ash systems. Records were viewed at the facility and showed no exceedances. Transfer points and storage were reviewed during the inspection and no opacity was viewed.

FGCOLDCLEANERS

This table is a general cold cleaner table to address the solvents, unit design and process restrictions for cold cleaners. The facility uses simple green in the parts washers, follows maintenance procedures and keeps the lids closed.

MAERS

MAERS will be reviewed once it has been received. Comments will be made in the MAERS system.

The facility appeared to be in good operating condition during the inspection, and in compliance with MI-ROP-N1266-2015. No issues.

NAME Becky Radulski

DATE 3/7/19

SUPERVISOR SN

