

STATE OF MICHIGAN

Rick Snyder, Governor



DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

CONSTITUTION HALL • 525 WEST ALLEGAN STREET • P.O. BOX 30260 • LANSING, MICHIGAN 48909-7760
www.michigan.gov/air

PUBLIC PARTICIPATION DOCUMENTS

For

Detroit Renewable Power

Detroit, Wayne County

SRN: M4148

**PROPOSED
STIPULATION FOR ENTRY OF FINAL ORDER
BY CONSENT (CONSENT ORDER)
AQD No. 6-2017**

March 8, 2017

International Institute of Metropolitan Detroit
111 East Kirby Street, Detroit, 48202
Informational Session: 6:00 p.m. in the American Room
Public Hearing: 7:00 p.m. in the Hall of Nations

FACT SHEET

Purpose

The Michigan Department of Environmental Quality, Air Quality Division (AQD) is seeking resolution from Detroit Renewable Power (Company) for operating the municipal solid waste incinerator in violations of 40 CFR Part 52, Subpart A; 40 CFR Part 60, Subpart Cb, Db, and Eb; 40 CFR Part 62, Subpart FFF; and its Renewable Operating Permit (ROP) number MI-ROP-M4148-2011a, Table FGBOILERS011-013, Special Conditions 1.1, 1.9 & I.11. The Company has exceeded emission limits at one or more RDF fired boilers. Emission exceedances include sulfur dioxide, carbon monoxide, and particulate matter. In addition, the Company has been cited for failure to perform certain quality assurance activities for the CEMS.

The proposed Consent Order requires the Company to comply with an approved Startup, Shutdown, and Malfunction Plan; to comply with existing particulate matter, carbon monoxide, and sulfur dioxide emission limits for three boilers; and comply with the quality assurance requirements for the continuous emission monitoring systems that are in operation at the facility.

Prior to acting on this Consent Order, the AQD is holding a public comment period and a public hearing to allow all interested parties the opportunity to comment on the proposed Consent Order. All relevant information received during the comment period and hearing will be considered by the decision-maker prior to taking final action on the Consent Order.

Background and Location

The Company, often referred to as the "Detroit Incinerator," is the largest municipal solid waste incinerator in the state of Michigan. Originally, the facility was built and operated by the City of Detroit. In November 2010, Detroit Renewable Energy bought the incinerator (operated under Detroit Renewable Power) along with Detroit Thermal Company and Hamtramck Power Plant. At that time, Detroit Renewable Energy was 75 percent owned by Atlas Holding Company. The Company processes municipal solid waste (MSW) into RDF, which is then burned to generate steam and electricity. The Company provides steam to downtown Detroit and electricity to DTE. The Company is permitted to receive up to 20,000 tons of MSW per week. The facility is located at 5700 Russell Street, Detroit, Wayne County, Michigan. The facility is less than two miles from Wayne State University, Detroit Institute of Arts and other institutions in Detroit's cultural center, and the Midtown area. The nearest residential areas are located to the east and to the southwest of the Company, with each neighborhood being within a quarter of a mile of the facility.

Compliance Issues

The Company has allegedly violated environmental air quality regulations related to operating the municipal solid waste incinerator in violation of federal regulations 40 CFR Part 52, Subpart A; 40 CFR Part 60, Subpart Cb, Db, and Eb; 40 CFR Part 62, Subpart FFF; and ROP No. MI-ROP-M4148-2011a, Table FGBOILERS011-13, Special Conditions 1.1, 1.9 & I.11. This includes particulate matter, carbon monoxide, and sulfur dioxide emission violations from the RDF fired Boiler #11, #12, and #13 as detailed in the Violation Notices issued by the AQD on June 29, 2015, November 9, 2015, December 16, 2015, February 12, 2016, March 4, 2016, May 19, 2016, and June 9, 2016. In addition, violations for failing to perform certain quality assurance activities for the CEMS were also cited.

Compliance Program

The proposed Consent Order requires the Company to comply with an approved Startup, Shutdown, and Malfunction Plan; to comply with existing particulate matter, carbon monoxide, and sulfur dioxide emission limits for three boilers; and comply with the quality assurance requirements for the continuous emission monitoring systems that are in operation at the facility.

The proposed Consent Order requires that a monetary settlement amount of \$149,000.00 be made to the State of Michigan general fund. Failure to comply with the terms and conditions of the proposed Consent Order could result in a maximum stipulated penalty of \$5,000.00 per violation per day.

Stack Testing

Per the existing ROP, the Company is required to conduct stack testing annually. Annual stack testing verifies emissions of the following pollutants: particulate matter, cadmium, hexavalent chromium, total chromium, lead, mercury, total dioxins/furans, fluoride, hydrogen chloride, and volatile organic compounds. When evaluating historical data from 2005 through 2016, the facility has been in compliance with emission limits for the pollutants listed above, with the exception of the PM exceedance on December 2, 2015, which is included in this Consent Order. At that time, the Company identified that corrosion caused a hole in the flue gas bypass damper allowing bypass of the dust collection system, resulting in the PM exceedance. The hole in the damper was repaired and a retest was conducted February 24, 2016. The February 2016 stack testing results demonstrate that the facility was in compliance with the PM emission limit. The SSM included as part of this Consent Order includes weekly and monthly preventative maintenance checklists to assure the baghouses are inspected for proper operation.

During the October 2016 stack testing, the facility was in compliance with all emission limits.

In addition to stack testing of the above listed pollutants, CO, NO_x and SO₂ emission limits are evaluated in conjunction with relative accuracy test audits (RATAs) of the CEMS. When comparing the results of the RATAs to emission limits, the facility has been in compliance with CO, NO_x, and SO₂ emission limits, with the exception of 1-hour CO emission limit exceedances on October 27, 28, and 29, 2015, which are included in this proposed Consent Order. At that time the facility claims that slag built up over the over-fire air nozzles resulting in poor combustion due to incorrect air and fuel adjustments (incorrect damper positions). As a result of the CO-1 hour exceedances, the facility contracted a third party to evaluate combustion optimization. New refractory was installed in all three boilers (completed November 18, 2015). In addition, the damper positions were verified and calibrated for all three boilers (completed November 20, 2015). The SSM, included as part of this Consent Order, includes a CO excursion Standard Operating Procedure (SOP) that includes immediate corrective actions if an excursion takes place. In addition, boiler startup and shutdown checklists are included to verify damper operation.

Continuous Emission Monitoring Systems (CEMS)

The facility utilizes CEMS to demonstrate compliance with CO, NO_x, and SO₂ emission limits. Using CEMS data, the facility was cited for violations of CO and SO₂ emission limits as described below.

Carbon Monoxide (CO)

On October 28 and 29, 2015, November 3, 2015, and February 14, 2016, the facility exceeded the 24-hour CO emission limit and violation notices were issued. Per the ROP, the 24-hour emission limit does not apply during periods of startup, shutdown, and malfunction. The 24-hour CO emission originates from emission standards included in the New Source Performance Standards (NSPS) for Municipal Waste Combustors 40 CFR Part 60 Subparts Cb and Eb, and the emission guidelines incorporated into the Federal Implementation Plan (FIP) under 40 CFR Part 62 Subpart FFF. The 24-hour CO emission limit is not a health-based standard.

On October 27, 28, and 29, 2015, December 11 and 15, 2015, and February 14, 2016, the facility exceeded the 1-hour CO emission limit for some of the operating hours and violation notices were issued. The 1-hour CO emission limit does not originate from emission standards included in the NSPS for Municipal Waste Combustors 40 CFR Part 60 Subparts Cb and Eb, nor the emission guidelines incorporated into FIP under 40 CFR Part 62 Subpart FFF. Additionally, the 1-hour CO emission limit is not a health-based standard.

The Company has historically had exceedances of the 1-hour CO emission limit on an occasional basis. The AQD has used discretion in issuing violations of the 1-hour CO emission limit. Because refuse derived fuel is nonhomogeneous in nature, short-term duration poor combustion incidents may occur due to fuel inconsistency. These short-term spikes in CO may result in an exceedance of the 1-hour CO emission limit. The AQD looks at the trends of exceedances of this standard, and evaluates whether action should be taken for exceedances. During the last two years, exceedances of the 1-hour CO emission limit was

approximately 1% of the total boiler operating time or less (not including start up or shut down scenarios). The 1-hour CO emission limit does not apply during periods of startup or shutdown.

The 1-hour exceedances on October 27, 28 and 29, 2015, December 11 and 15, 2015, and February 14, 2016 were either in conjunction with a 24-hour CO emission limit exceedance or were multiple 1-hour CO exceedances that occurred continuously over the course of a day indicating poor combustion and corrective action not being implemented to achieve compliance with the 1-hour CO emission limit.

The facility claims that the CO violations (either 24-hour or 1-hour) are the result of slag built up over the over-fire air nozzles and incorrect air and fuel adjustments (incorrect damper positions), plugged fuel feed chutes, broken augers that meter fuel to boiler, and boiler grate malfunction (broken chain), all which resulted in poor combustion. The facility states that corrective actions were implemented including reducing fuel load, increasing auxiliary fuel (fuel oil), adjusting air flows, and reducing grate speeds.

The SSM, included as part of this Consent Order, includes a CO excursion SOP that includes immediate corrective actions if an excursion takes place. In addition, the SSM includes a boiler grate malfunction SOP, boiler feed chute plug SOP, and boiler startup and shutdown checklists used for verifying proper operating condition of the boilers.

Nitrogen Oxides (NOx)

The NOx emission limit is a 1-hour limit that does not apply to periods of startup or shutdown. The facility has reported exceedances of the 1-hour NOx emission limit in the past year, but the reported incidents occurred during either startup or shutdown. Therefore, no violations have been issued for this emission limit.

Sulfur Dioxide (SO2)

On March 1 and 14, 2015, July 20, 2015, November 8, 2015, and April 21, 2016, the 24-hour SO2 emission limit was exceeded and violation notices were issued. Per the ROP, the 24-hour emission limit does not apply during periods of startup, shutdown, and malfunction. The November 8, 2015, SO2 exceedance occurred during a two-period hour between 10:00 p.m. and 12:00 a.m. during startup of the boiler. Because the limit does not apply to startup and shutdown this violation was considered resolved. For the remaining SO2 violations, the facility claims the SO2 exceedances are the result of problems with the lime slurry delivery system, inadequate reaction time by facility personnel, and plugged spray nozzles on the atomizing wheel of the spray dryer. Immediate corrective actions described by the Company include back flushes of the system (to remove plugs), changing out the sprayer and atomizing wheel, and taking the boiler offline.

The SSM, included as part of this proposed Consent Order, includes a "High SO2" SOP that includes immediate corrective actions to take place for elevated SO2 readings. In addition, the SSM includes an SDA Malfunction SOP, and SDA preventative maintenance checklist (weekly, monthly, and semi-annual), and boiler startup and shutdown checklists that include SDA inspection.

Present Air Quality

The Company's facility is located in a part of Wayne County, which is meeting the National Ambient Air Quality Standards for all criteria pollutants.

Recommendation

The AQD staff believes that the proposed Consent Order, as drafted, contains an appropriate compliance program for resolution of the federal and state air quality violations at the Company's facility. The AQD staff recommends that the proposed Consent Order be entered, unless substantive adverse comments are received during the public comment period.

If you would like additional information about the proposed Consent Order, please contact Mr. Jason Wolf, Air Quality Division, at 517-284-6772.

**PUBLIC PARTICIPATION
DOCUMENT:**

**FREQUENTLY ASKED
QUESTIONS**

FREQUENTLY ASKED QUESTIONS

The Michigan Department of Environmental Quality (DEQ), Air Quality Division (AQD) is seeking the proposed entry of a Stipulation for Entry of Final Order by Consent (Consent Order) with Detroit Renewable Power (Company) for violations that occurred at the facility located at 5700 Russell Street in Detroit, Michigan. The AQD is accepting public comments until the close of the public hearing on March 8, 2017, which will be held at the International Institute of Metropolitan Detroit, Hall of Nations, 111 East Kirby Street, Detroit, Michigan 48202. Prior to the public hearing, an informational session will be held from 6:00 p.m. to 7:00 p.m. where staff will be available to answer questions. The public hearing will immediately follow. All comments will be reviewed by the decision-maker prior to the final decision and entry of the proposed Consent Order.

How do the public comment period and public hearing work?

The law requires the AQD to hold a public comment period and accept comments on proposed Consent Orders. The AQD reviews all comments before the final decision is made. Based on comments received during the public comment period and during the public hearing, the AQD may issue the Consent Order as proposed or attempt to reach agreement with the Company regarding a revised Consent Order. Prior to the public hearing, an informational session is held where staff will be made available to answer questions concerning the proposed Consent Order.

Comments regarding the proposed Consent Order that the AQD staff can consider include:

- Technical or mathematical mistakes.
- Why the proposed compliance plan is not adequate.
- Why the proposed settlement amount is not appropriate.
- Why the proposed Consent Order should include additional requirements.

What is a Stipulation for Entry of Final Order by Consent?

The Stipulation for Entry of Final Order by Consent is a legal agreement between the DEQ and the Company, very similar to a contract, and is usually called a Consent Order. A Consent Order is a legally-enforceable document that binds the DEQ and the Company for the purpose of resolving the alleged violations of laws or regulations administered by the DEQ. A Consent Order normally incorporates a compliance program for resolving the alleged violations and ensuring the violations are not repeated, a monetary settlement, and provisions for stipulated penalties for failure to comply with the terms and conditions of the proposed Consent Order. The purpose of monetary sanctions is to provide an incentive for achieving and maintaining compliance.

Why does the Company need to enter into a Consent Order with the DEQ?

The Company has exceeded the permitted emission limits for sulfur dioxide (SO₂), carbon monoxide (CO), and particulate matter (PM) from one or more of the three boilers operating at the facility. Pollutant monitors installed to measure the boiler's emissions detected the sulfur dioxide and carbon monoxide exceedances. The particulate matter exceedance was for boiler #11 only and was measured during the required annual stack test in December 2015.

What is the purpose of this proposed Consent Order for the Company?

This proposed Consent Order incorporates a compliance program for resolving the alleged violations that occurred at the Company's facility. This proposed Consent Order also includes a fine amount of \$149,000.00. By law, the fine must go to the State of Michigan general fund. The Company is required to comply with an approved Startup, Shutdown, and Malfunction Plan; to comply with existing particulate matter, carbon monoxide, and sulfur dioxide emission limits for the three boilers; and comply with the quality assurance requirements for the continuous emission monitoring systems that are in operation at the facility. The Company will be fined for failure to comply with the terms and

conditions of the Consent Order that could result in a maximum stipulated penalty of up to \$5,000.00 per violation per day.

How was the penalty amount determined?

The initial penalty offer is calculated using the United States Environmental Protection Agency Clean Air Act Stationary Source Civil Penalty Policy. This Policy takes into account several factors, including: the actual or possible harm of the violation, the length of time of the violation, the sensitivity to the environment, importance to the regulatory scheme, and the size of the violator.

What happens if the Company is found in violation of this Consent Order?

Depending on which term of the Consent Order is violated additional penalty amounts have been set up to \$5,000.00 per violation per day.

How might this violation impact people's health?

We evaluated if there might be health problems from the permit emission limit exceedances for sulfur dioxide, carbon monoxide, and particulate matter that were associated with the violations. To do this, we estimated the maximum ambient impact for each pollutant from the exceedances that someone might have breathed and compared this level to the national ambient air quality standards. Then, with data from local air monitors, we estimated the background concentration around the time of the violation and also added this to the predicted maximum ambient impact from the exceedances. We found that health problems are not expected to occur based on the maximum ambient impact from the exceedances along with the background levels of sulfur dioxide, carbon monoxide, and particulate matter at the time the exceedances occurred.

What is known about possible health impacts besides the time period of this stack test?

During the time periods outside of the stack test, there is not enough information to know if the facility may have reached levels that might cause health problems.

What about the loud noises that are coming from the Company's facility?

The noise complaints cannot be addressed by the DEQ as they are not under the DEQ's jurisdiction. If you have noise complaints regarding the Company's facility, they should be made to the City of Detroit Ombudsman Office by calling 313-224-6000. Additional information regarding filing a complaint can be found online at <http://www.detroitmi.gov/How-Do-I/File/Ombudsman-FAQs>.

**PUBLIC PARTICIPATION
DOCUMENT:**

**ODOR CONCERNS
&
EMISSION CONCERNS**

ODOR CONCERNS

Are odor violations a part of this proposed Consent Order?

No, alleged odor violations are subject to the terms of the Consent Judgment File No. 14-1184-CE (Consent Judgment) entered in court on October 20, 2014, and can be reviewed online at http://www.deq.state.mi.us/aps/downloads/SRN/M4148/M4148_CJ_20141017.pdf. The Consent Judgment requires the Company to design and install a system for controlling odors from the refuse-derived fuel (RDF) storage building and conveyor gallery. The odor control system was designed to collect air from the storage building and conveyor gallery and move it to the boiler air intakes. The odorous air is used in the combustion process of one or more of the three existing boilers, which reduce the amount of odor causing compounds released.

The design, installation, and testing of the odor control system was reported to be completed as designed in a report dated October 28, 2016. Since entry of the Consent Judgment, the Michigan Department of Environmental Quality (DEQ), Air Quality Division (AQD) staff have continued to conduct inspections to verify compliance with the terms of the Consent Judgment, including odor control requirements. The AQD may make a determination that additional odor control measures are necessary if nuisance odors continue to be attributed to the Company. If so, the AQD must provide written notice to the company of continuing noncompliance with the terms of the Consent Judgment, and ask the Company to implement additional measures to control odors. The company may agree with or may dispute this determination.

What has been done by the Company to reduce odors from the facility?

During the negotiations of the Consent Judgment and leading to the entry date on October 20, 2014, the Company installed an odor neutralizer spray system in the RDF Storage Building. The Consent Judgment requires that the Company properly operate odor neutralizer systems in the RDF and municipal solid waste (MSW) processing areas from April 15 through October 15.

Additionally, the Consent Judgment required the Company to design a system for controlling odors from the RDF Storage Building and RDF Conveyor Gallery (collectively, the RDF Control System). The RDF Control System collects and carries exhaust air to the boilers for combustion. Combusting the air is intended to reduce odorous emissions from the processes. The Consent Judgment established a schedule for the design, construction, and testing of the RDF Control System to assure it was built and is operating as designed. This testing was conducted on October 28, 2016; the Company's contractor reported that the RDF Control System is operating consistently with the design plans.

Since entry of the Consent Judgment, DEQ staff has continued inspections to verify compliance with its terms, including odor control requirements. The DEQ may determine that additional odor control measures are necessary if the DEQ identifies Rule 901 nuisance odors attributed to the Company. If so, the DEQ must provide written notice to the Company seeking additional odor control measures.

What happens if the changes made by the Company have not reduced the odors?

Under the Consent Judgment terms, following the RDF Control System test verification, the DEQ may determine that additional measures are necessary to control nuisance odors from the facility in order to assure compliance with Rule 901. The DEQ may request that the Company submit plans and/or operational commitments that describe additional measures for controlling odors from the facility, together with an implementation schedule. Under the terms of the Consent Judgment the Company may submit plans for additional odor control, or may dispute the DEQ's determination that additional control is necessary. If the Company disputes the DEQ's determination, the Consent Judgment identifies the procedure for dispute resolution, which ultimately may be decided by the Court. The Court may adjudicate the dispute resolution and additionally may review the Company's written plans for additional odor control measures, operational commitments, and proposed implementation schedule.

What has been done by the DEQ to enforce the Consent Judgment?

The DEQ responds to odor complaints by undertaking odor investigations. If staff confirms odors in violation of Rule 901 are coming from the Company they will issue a violation notice which seeks a corrective action and written response. Based upon these documents, the DEQ may seek stipulated fines of up to \$5,000.00 for each violation of Rule 901 or other measures required by the Consent Judgment. The DEQ has issued three stipulated fine demand letters under the Consent Judgment for violations cited in violation notices, totaling \$85,000.00. The Company has paid this amount but disputed two citations. The most recent stipulated fine demand was issued in November 2016.

EMISSION CONCERNS

Why did the emission limit exceedances happen?

The Company asserts that the exceedances occurred due to various equipment malfunctions, maintenance issues, or inadequate reaction time to identified malfunctions.

By entering into the proposed Consent Order, what will the Company be required to do to maintain compliance with the emission limits?

In addition to meeting the existing emission limits, the Company will be required to demonstrate compliance with the approved Startup, Shutdown, and Malfunction Plan (SSM). The SSM includes standard operating procedures, maintenance and preventative maintenance schedules, and record keeping requirements. The SSM and associated record keeping requirements allow the AQD to verify that the Company is performing the necessary maintenance, preventative maintenance, and following operating procedures in an effort to meet existing emission limits.

What will happen if the Company continues to exceed these emission limits?

The Company is required to comply with existing particulate matter, carbon monoxide, and sulfur dioxide emission limits for the three boilers. If an exceedance of an emission limit is identified, and a violation notice is issued, per the Consent Order, the Company is required to pay stipulated penalties up to \$5,000.00 per violation day.

How are the emissions from the boilers controlled?

The products of combustion from the RDF furnaces are controlled by a spray dryer, a fabric filter system, and good combustion practices. Combustor flue gas first enters the spray dryer absorber (SDA) where it is contacted by a cloud of finely atomized droplets of hydrated lime slurry. The flue gas temperature is decreased and the humidity is increased as the lime slurry simultaneously reacts with acid gases present and evaporates to dryness. The lime slurry removes acid gases, trace metals, and organics. The fabric filter, located downstream of the spray dryer absorber, removes the reacted lime compounds and particulate matter from the combustion flue gas. Unreacted lime reagent embedded in the baghouse filtercake provides added acid gas removal. Particulate matter captured by the fabric filter is discharged into hoppers and subsequently delivered by transfer conveyors to the ash discharger, wetted and mixed with bottom ash. The control of carbon monoxide, oxides of nitrogen (NOx), and organic compound emissions is provided through the use of good combustion practices such as burning preprocessed fuel (RDF), combustion air preheating, a high degree of control of combustion air flow distribution and controlling combustion temperature.

How does the Company demonstrate compliance with emission limits?

The Company is required to demonstrate compliance with emission limits through annual stack testing or through continuous emission monitoring systems (CEMS).