

Frederick/Carroll County Renewable Waste-to-Energy Facility  
Prevention of Significant Deterioration Approval Conditions  
PSD Approval PSD-2014-01

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This Prevention of Significant Deterioration (PSD) Approval covers the following equipment:

<b>Equipment Description</b>	<b>MDE Registration Number</b>
Two Municipal Waste Combustors, including ancillary equipment and associated air pollution control equipment.	021-0692-2-0069
One Emergency Firewater Diesel Pump Engine	021-0692-9-0330

**PART A – GENERAL PROVISIONS**

1. The following Prevention of Significant Deterioration (PSD) Approval application and supplemental information are incorporated into this permit by reference:
  - (a) Application for Prevention of Significant Deterioration (PSD), and Non-Attainment New Source Review (NA-NSR) approvals received on February 15, 2011 and amendments received on August 25, September 15, 2011, March 29, May 24, and October 9, 2012 for the construction of two (2) 750 tons per day waterwall municipal waste combustors with associated air pollution control equipment, and one (1) 305 brake-horsepower (bhp) emergency firewater pump diesel engine.
  - (b) Air Quality Permit to Construct applications received February 15, 2011 for the following equipment:
    - Two 750 tpd mass burn municipal waste combustors (MWCs), each with a Maximum Continuous Rating of 343.8 MMBtu/hour.
    - Two Spray Dryer Absorbers (SDA) for MWCs
    - Two Baghouses for MWCs
    - Two Selective Catalytic Reduction (SCR) systems for MWCs
    - One 305 HP Emergency Diesel Engine
    - One 3-cell Mechanical Draft Cooling Tower
    - One set of High Efficiency Drift Eliminators for Cooling Tower
    - One Wet Scrubber for Fly Ash Surge Bin

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- One Wet Scrubber for Ash and Metal Recovery Building
  - Two Reagent Storage Silos Equipped with Bin Vent Filters
- (c) Supplemental Air Quality Impact Analysis for 1- hour NO<sub>2</sub> and SO<sub>2</sub> Impacts received on August 25, 2011;
- (d) Response to ARMA comments and corrected pages to the application dated September 16, 2011 and May 23, 2012;
- (e) Class II Area Plume Visibility and Air Quality Analysis dated November 2011; and
- (f) Revised Greenhouse Gas BACT determination received on May 23, 2012.

If there are any conflicts between representations in this Approval and representations in the applications, the representations in the Approval shall govern. Estimates of dimensions, volumes, emissions rates, operating rates, feed rates and hours of operation included in the applications do not constitute enforceable numeric limits beyond the extent necessary for compliance with applicable requirements.

2. Upon presentation of credentials, representatives of the Maryland Department of the Environment (“MDE-ARMA” or the “Department”) and the Frederick County Health Department shall at any reasonable time be granted, without delay and without prior notification, access to the Permittee’s property and permitted to:
- (a) inspect any construction authorized by this Approval;
  - (b) sample, as necessary to determine compliance with requirements of this Approval, any materials stored or processed on-site, any waste materials, and any discharge into the environment;
  - (c) inspect any monitoring equipment required by this Approval;
  - (d) review and copy any records, including all documents required to be maintained by this Approval, relevant to a determination of compliance with requirements of this Approval; and
  - (e) obtain any photographic documentation or evidence necessary to determine compliance with the requirements of this Approval.
3. Nothing in this Approval authorizes the violation of any rule or regulation or the creation of a nuisance or air pollution.
4. If any provision of this Approval is declared by proper authority to be invalid, the remaining provisions of the Approval shall remain in effect.

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**PART B – APPLICABLE REGULATIONS**

1. COMAR 26.11.02.04 which states that a permit to construct or an Approval expires, if as determined by the Department, that:
  - (a) Construction has not commenced within 18 months after the date of issuance of the permit to construct or Approval;
  - (b) Construction is substantially discontinued for a period of 18 months after construction has commenced; or
  - (c) Construction is not completed within a reasonable period of time after the date of issuance of the permit to construct or Approval.
2. COMAR 26.11.06.14, which states that the Permittee shall not construct, modify, or operate a PSD source as defined in COMAR 26.11.01.01B(37) without first obtaining a PSD Approval in accordance with the provisions of 40 CFR Part 52.21.
3. COMAR 26.11.02.09A, which states that the Permittee cannot construct a source without first obtaining the necessary permits to construct and approvals.

**PART C – BACT REQUIREMENTS**

1. To meet Best Available Control Technology (BACT) requirements when burning municipal solid waste (MSW) (alone or in conjunction with natural gas, tires, or acceptable sewage sludge), emissions of particulate matter (PM, PM10), carbon monoxide (CO), MWC Organics, MWC Acid Gases (hydrogen chloride (HCl), and sulfur dioxide (SO<sub>2</sub>)), MWC Metals (mercury (Hg), lead (Pb), cadmium (Cd)), hydrogen fluoride (HF), and sulfuric acid mist (SAM) from the MWCs shall not exceed the limits specified in Table 1 through the installation, maintenance and operation of the following equipment for each MWC:
  - (a) A spray dryer absorber (SDA) (Turbosorp® or equivalent) hydrated lime and carbon-based sorbent injection system for the control of acid gases, mercury, and dioxins/furans;
  - (b) A fabric filter baghouse equipped with expanded Teflon (ePTFE) membrane filters for the control of particulate matter (PM and PM10);
  - (c) A selective catalytic reduction (SCR) system with process steam reheat;
  - (d) Flue gas recirculation (FGR);
  - (e) Water-cooled combustion grate

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- (f) Combustion air optimization.
2. To meet BACT requirements, emissions from the nominal 305 HP emergency firewater pump diesel engine shall be designed to meet the emission limits specified in Table 2 through the use of ultra-low sulfur diesel fuel, a limitation on the hours of operation to 100 hours per year (excluding emergencies), and the implementation of good combustion practices.
  3. To meet BACT requirements for PM and PM10, the cooling towers shall be equipped with high efficiency drift eliminators designed to achieve a drift loss not to exceed 0.0005% of re-circulating water flow.
  4. To meet the BACT requirements for Greenhouse Gas (GHG) emissions, the Permittee shall use the following technologies to increase the energy efficiency of the MSW combustors:
    - (a) Water-cooled grates, which allow the primary air in the combustion zones to be controlled exclusively by the requirements of the combustion process and not on the need for grate cooling, thereby reducing the amount of excess air in the combustion process;
    - (b) Combustion air preheat system to increase combustion cycle efficiency;
    - (c) Flue gas re-circulation system, which increases boiler efficiency and reduces the amount of gas requiring treatment;
    - (d) High steam cycle. During normal operations, steam will be produced in the boilers at a nominal pressure and temperature of 1,305 psia and 932° F to provide higher steam turbine efficiency that will produce more than 670 net kilowatt-hours (kWh) per ton of MSW combusted; and
    - (e) Limit GHG BACT emissions to 241 tons of CO<sub>2</sub>e per million pounds of steam produced, computed on a 12 month rolling average.
  5. To meet BACT requirements for Material Handling Operations, the Permittee shall employ the following measures to control PM/PM10:
    - (a) Ash and Metal Recovery Building: wet scrubber
    - (b) Fly Ash Surge Bin: wet scrubber
    - (c) Conveyors/Transfer Points: enclosed and vented to wet scrubbers
    - (d) Reagent Storage Silos: bin vent filters
    - (e) Roads: Fugitive emission control strategies
  6. Facility-wide emissions shall be limited to those levels specified in Table 4 for any consecutive 12-month rolling period, including emissions during periods of startup, shutdown, and malfunction.

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**PART D – TESTING REQUIREMENTS**

1. Stack performance testing of the combustors shall be conducted within 180 days after initial startup to quantify pollutant emissions and demonstrate compliance with the emission limits specified in this approval for the following pollutants: PM, PM10, SAM, HCl, Hg, dioxin/furans, Cd, and Pb. Emissions of NO<sub>x</sub>, SO<sub>2</sub> and CO shall be determined based on the continuous emissions monitoring system (CEMS) in accordance with Part F of this permit. The Permittee may request approval from EPA and MDE-ARMA to use certified CEMS in lieu of stack testing for compliance for other pollutant emissions. Initial performance tests shall comply with applicable requirements outlined in 40 CFR 60.58b(h) and 40 CFR 60.59b(f).
2. At least 30 days prior to conducting any stack performance test, the Permittee shall submit a test protocol to MDE-ARMA for review and approval.
  - a) Stack performance testing for SAM, HCl, Hg, Cd, Pb, and dioxin/furans shall be conducted in accordance with MDE-ARMA Technical Memorandum (TM) 91-01, "Test Methods and Equipment Specifications for Stationary Sources" (January 1991), as amended through Supplement 3 (1 October, 1997), 40 CFR §51, 40 CFR §60, or subsequent test protocols approved by MDE-ARMA;
  - b) Stack performance testing for PM emissions from the MWCs shall be conducted according to EPA Method 5 or equivalent method approved by MDE-ARMA. For PM10, testing shall be conducted according to EPA Method 201/201A and 202 or equivalent method approved by MDE-ARMA.
  - c) During the performance tests for dioxin/furans and mercury, as applicable, the Permittee shall establish an average carbon mass feed rate based on carbon injection system operating parameters being employed [40 CFR 60.58b(m)(1)];
  - d) An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance tests for mercury emissions and each subsequent performance test for mercury emissions [40 CFR 60.58b(m)(1)(i)];
  - e) An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance tests for dioxin/furan emissions and each subsequent performance test for dioxin/furan emissions. If a subsequent dioxin/furan performance test is being performed on only one affected unit at the MWC plant, the owner or operator may elect to apply the same estimated average carbon mass feed rate from the tested facility for all the similarly designed and operated affected units at the MWC plant [40 CFR 60.58b(m)(1)(ii)];

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- f) During operation of the MWCs, the carbon injection system operating parameters that are the primary indicators of the carbon mass feed rate must be equal to or exceed the levels documented during the performance tests specified under 40 CFR 60.58b(m)(1)(i) and (ii), except as specified in paragraphs (m)(2)(i) and (m)(2)(ii);
  - g) Test ports shall be located in accordance with MDE-ARMA Technical Memorandum (TM) 91-01, "Test Methods and Equipment Specifications for Stationary Sources" (January 1991), as amended through Supplement 3 (1 October, 1997), 40 CFR §51, 40 CFR §60, or alternative measures approved by MDE-ARMA; and
  - h) For any subsequent stack test, the Permittee shall either notify MDE-ARMA that the earlier approved protocol is to be used or shall submit a revised protocol for review and approval.
3. Initial and annual stack performance tests shall be conducted to demonstrate compliance with the BACT emission limitations for PM, PM<sub>10</sub>, SAM, HCl, Hg, Cd, Pb and dioxin/furans specified in Table 1. Annual stack performance test shall be conducted each calendar year no less than 9 months nor more than 15 calendar months following the previous stack tests. In addition, the Permittee shall conduct an initial stack test for VOC and PM<sub>2.5</sub> on the MWCs for informational purposes only.
4. During the required stack emission testing, each MWCs shall operate at least 90% or higher of their rated steam production capacity.
5. Within 45 days after conducting any stack test required under this approval, the Permittee shall submit to MDE-ARMA a stack test report, which shall include the following information:
- (a) Emissions data including the pollutant concentration, gas volume, temperature, and oxygen content of the combustion exhaust gases leaving the exhaust stack;
  - (b) Hourly steam flow rates produced during the testing period, measured in pounds of steam; and
  - (c) The appropriate ranges of good combustion operating parameters for each municipal waste combustor.
6. In accordance with COMAR 26.11.01.04A, the Permittee may be required by MDE-ARMA to conduct additional stack tests at any reasonable time, to determine compliance with COMAR Title 26, Subtitle 11.

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**PART E – MONITORING REQUIREMENTS**

1. The Permittee shall use CEMS to monitor NO<sub>x</sub>, SO<sub>2</sub>, CO, HCl, Hg, CO<sub>2</sub> emissions and opacity from each MWC.
2. The Permittee shall install, operate, maintain, and calibrate the CEMS in accordance with the Performance Specifications under 40 CFR Part 60, Appendix B and the Quality Assurance Procedures under 40 CFR Part 60, Appendix F.
3. The CEMs shall be certified within 180 days of the commencement of operation of waste to energy facility unless the Permittee applies for and obtains an extension granted by MDE-ARMA.

**PART F – COMPLIANCE DEMONSTRATION**

1. Upon certification of the CEMS, the Permittee shall use the CEMS to conduct initial performance tests and thereafter demonstrate compliance with the NO<sub>x</sub>, SO<sub>2</sub>, CO, and CO<sub>2</sub> emissions and opacity limits specified in Table 1.
2. If Hg CEMS are used for compliance demonstration, then compliance shall be based on 24-hour daily block averages of hourly arithmetic concentrations [40 CFR 60.58b(d)(4) and (n)]
3. Use of CEMS for compliance demonstration shall be as specified in the Department's Air Management Administration Technical Memorandum 90-01 "Continuous Emission Monitoring (CEM) Policies and Procedures".

**PART G – REPORTING AND RECORDKEEPING REQUIREMENTS**

1. The following records with supporting documentation shall be maintained on site for at least 5 years and made available to MDE-ARMA upon request:
  - (a) Combined MWC mass emissions of NO<sub>x</sub>, SO<sub>2</sub>, CO, HCl and CO<sub>2</sub> for each calendar month and each rolling 12-month period;
  - (b) Monthly throughput of tires measured in tons per month;
  - (c) Monthly throughput of sewage sludge measured in tons per month;
  - (d) Monthly natural gas usage in millions BTU per month for each combustor.
  - (e) Monthly chemical reagent usage, pound/month for SCR and SDA;
  - (f) All stack emission test reports;

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- (g) All CEMS emission monitoring data; and
  - (h) All CEMS certification and calibration results.
2. The Permittee shall submit to MDE-ARMA, not later than 30 days following each calendar quarter, a quarterly summary report. The report shall be in a format approved by MDE-ARMA and shall include the following:
- (a) Summaries of the monthly and consecutive rolling 12-month total hours of operation, steam production (MWCs) and total emissions of NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2e</sub> separately for the MWCs and the emergency firewater pump diesel engine.
  - (b) The cause and time periods, including start-up and shut-downs, and magnitude of all emissions which exceed the applicable emissions standards;
  - (c) The source downtime including the time and date of the beginning and end of each downtime period and whether the source downtime was planned or unplanned;
  - (d) The time periods and cause of all CEMS downtime including records of any repairs, adjustments, or maintenance that may affect the validity of emission data;
  - (e) Quarterly totals of excess emissions, unit downtime, and CEMS downtime during the calendar quarter;
  - (f) Quarterly quality assurance activities;
  - (g) Daily calibration activities that include reference values, actual values, absolute or percent of span differences, and drift status; and
  - (h) Other information required by MDE-ARMA that is determined to be necessary to evaluate the data, to ensure that compliance is achieved, or to determine the applicability of this requirement.

All information stated above shall be retained for a minimum of 5 years from the time the report is submitted.

- 3 All air quality notifications and reports required by this Approval shall be submitted to:

Administrator, Compliance Program  
Air and Radiation Management Administration  
1800 Washington Boulevard  
Baltimore, Maryland 21230



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**Table 1 - Summary of BACT Requirements for Municipal Waste Combustors**

<b>Pollutant</b>	<b>Control Technology</b>	<b>BACT Limit</b> (averaging period)	<b>Performance Test</b>	<b>Continuous Compliance Method<sup>1</sup></b>
NO <sub>x</sub>  Normal Operation (also subject to LAER)	Selective Catalytic Reduction (SCR), Flue gas re-circulation (FGR), Water-cooled combustion grate, Good Combustion Practices (GCP)	45 ppmvd corrected to 7% oxygen (O <sub>2</sub> ) (24-hour daily block average <sup>2</sup> )	Initial performance test using CEMS and EPA RM 19. (40 CFR 60.b(i)(2)]. Methods and procedures as specified in 40 CFR 60.58b(h).	NOx CEMS performance test procedures and test methods specified in 40 CFR 60.58b(h)(1)-(7).
NO <sub>x</sub>  Startups and Shutdowns (also subject to LAER)	SCR FGR Water-cooled combustion grate, GCP	45 ppmvd corrected to 7% O <sub>2</sub> (Contiguous 24-hour average <sup>3</sup> )	Not required	NOx CEMS performance test procedures and test methods specified in 40 CFR 60.58b(h)(1)-(7).
CO  Normal operation	Use of natural gas GCP	100 ppmvd @ 7% O <sub>2</sub> (4-hour block average) 80 ppmvd @ 7% O <sub>2</sub> (30 day block average)	Initial performance test using CEMS (40 CFR 60.b(i)(2)]. Methods and procedures as specified in 40 CFR 60.58b(i).	CO CEMS performance test procedures and test methods specified in 40 CFR 60.58b(i)(3) and (4).
Startup and shutdown	Use of natural gas for start-up operation	100 ppmvd @ 7% O <sub>2</sub> (Contiguous 24-hour average <sup>3</sup> )	Not required	SAME
PM	Fabric Filter Use of natural gas for start-up operation	<b>PM Filterable</b> 10 mg/dscm @ 7-percent O <sub>2</sub> (Minimum 3-	Initial and annual stack performance test using EPA RM 5	Parametric Monitoring - Pressure drop indicator, COMS, inlet flue gas

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PM <sub>10</sub>	Fabric Filter Use of natural gas for start-up operation	test run average <sup>5</sup> ) <b>PM Filterable and Condensable</b> 24 mg/dscm @ 7-percent O <sub>2</sub> (Minimum 3-test run average)	(40 CFR 60.58c) Initial and annual stack performance test using EPA RM  201/201A and 202	temperature indicator and Broken Bag Detectors (BBD). Details to be specified in an approved Continuous Compliance Monitoring Plan.
SO <sub>2</sub>	Spray dryer absorber (SDA), Fabric Filter	24 ppmvd @7-percent O <sub>2</sub> (24-hour daily geometric block average <sup>4</sup> ) 14 ppmvd @7-percent O <sub>2</sub> (annual 12 month rolling average)	Initial performance test using CEMS and EPA Reference Method 19. Applicable test procedures and methods as specified in 40 CFR 60.58b(e).	SO <sub>2</sub> CEMS performance test procedures and test methods specified in 40 CFR 60.58b(e)(1)-(8)
<b>MWC Metals</b>				
Pb	Fabric Filter	75 µg/dscm @ 7-percent O <sub>2</sub> (Minimum 3-test run average)	Initial and annual stack performance tests using EPA RM 29 per 40 CFR 60.58b(d)(1).	Parametric Monitoring - Pressure drop indicator, COMS, inlet flue gas temperature indicator and Broken Bag Detectors (BBD).
Cd	Fabric Filter	10 µg/dscm @ 7-percent O <sub>2</sub> (Minimum 3-test run average)	EPA RM 29 Initial and annual stack performance tests using EPA RM 29 per 40 CFR 60.58b(d)(1).	Parametric Monitoring - Pressure drop indicator, COMS, inlet flue gas temperature indicator and Broken Bag Detector

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Hg	SDA with carbon-based sorbent and fabric filter	17 µg/dscm @ 7-percent O <sub>2</sub> (Minimum 3-test run average <sup>6</sup> )	Initial and quarterly performance tests, using EPA RM 29, except as provided in 40 CFR 60.58b(d)(4) and (n).	<p>CEMS shall be operated in accordance with NSPS Subpart Eb, including, but not limited to, 40 CFR 60.58b(d)(4) and (n).</p> <p>FCCRRF shall have the option to demonstrate compliance using CEMS [40 CFR 60.58b(d)(4) and (n)]</p> <p>On or after two years following initial startup, MDE may require compliance to be demonstrated using CEMS.</p> <p>If a CEMS is used for the purpose of compliance demonstration, then compliance shall be based on 24-hour daily block averages of hourly arithmetic concentrations [40 CFR 60.58b(d)(4) and (n)]</p> <p>If a CEMS is used for the purpose of compliance demonstration, then performance testing requirements via stack testing are waived [40 CFR 60.58b(d)(4) and (n)]</p>
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<b>MWC Organics</b> (Dioxin/Furan)	SDA with carbon-based sorbent, GCP, Fabric Filter	10 ng/dscm @7-percent O <sub>2</sub> (Average of at least 3 test runs (40 CFR 60.58b (g)(9) with a minimum sampling time of 4 hours per test run (40 CFR 60.58b(g)(3)(i))	Initial and annual stack performance tests using EPA RM 23, except as provided in 40 CFR 60.58b(g) (5).	Parametric Monitoring - Carbon injection flow rate, inlet flue gas temperature.
<b>MWC Acid Gases</b>				
HCl	SDA, Fabric Filter	20 ppmvd @ 7% O <sub>2</sub> (3-hour block average)	Initial and annual stack performance tests using EPA RM 26/26A	FCCRRF shall install and operate HCl CEMS in accordance with NSPS Subpart Eb, including, but not limited to 40 CFR 60.58b(f)(8), (n), and (o).
HF	SDA, Fabric Filter	4.3 ppmvd @7-percent O <sub>2</sub> (3-hour block average)	Initial and annual performance tests using EPA RM 13B	Parametric Monitoring - Pressure drop indicator, exit flue gas temperature indicator and lime flow rate.
H <sub>2</sub> SO <sub>4</sub>	SDA, Fabric Filter	3.6 ppmvd @7-percent O <sub>2</sub> (3-hour block average)	Initial and annual stack performance tests using EPA RM 8	Parametric Monitoring - Pressure drop indicator, exit flue gas temperature indicator and lime flow rate.
GHG	Renewable primary fuel/ MWC design.	241 tons of CO <sub>2</sub> e/MM lbs steam produced (12 month rolling average)	Not required	CO <sub>2</sub> CEM

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Table 1 Footnotes

<sup>1</sup>Alternative stack performance test reference methods (RMs) for demonstrating compliance will be acceptable upon MDE-ARMA approval.

<sup>2</sup>24-hour block average must be based on a minimum of 18 hours of MWC unit operating time.

<sup>3</sup> “Contiguous 24 hour average” is the average of the first 24 consecutive hourly averages inclusive from the start of continuous combustion including the hour in which continuous combustion started. For shutdowns it is the average of the previous 24 consecutive hourly averages inclusive prior to cessation of continuous combustion including the hour in which continuous combustion ceased.

<sup>4</sup> 24 hour daily block average must be based on a minimum of 18 hours of MWC unit operating time.

<sup>5</sup>If PM CEMS is used for compliance demonstration in lieu of COMS, then compliance shall be based on 24-hour daily block averages of hourly arithmetic concentrations and in accordance with a monitoring plan approved by MDE-ARMA.

<sup>6</sup>If Hg CEMS is used for compliance demonstration, then compliance shall be based on 30 day block averages of arithmetic concentrations and in accordance with a monitoring plan approved by MDE-ARMA.

<sup>7</sup>If HCl CEMS is used for compliance demonstration, then compliance shall be based on 24-hour daily block averages of hourly arithmetic concentrations and in accordance with a monitoring plan approved by MDE-ARMA.

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**Table 2 - Summary of BACT Requirements for Other Emission Units**

<b>Emission Unit</b>	<b>Pollutant</b>	<b>Control Technology</b>	<b>Proposed BACT Emission Limit</b>
<b>Emergency Firewater Pump Diesel Engine</b>	NO <sub>x</sub>	Good combustion practice and limit of annual operating hours of 100 hours per year (excluding emergencies) - NSPS Subpart IIII for a 2009 model year or later	3.0 g/bhp-hr (also LAER limit) for total NO <sub>x</sub> and non-methane hydrocarbon (NMHC) emissions <sup>1</sup>
	SO <sub>2</sub> / H <sub>2</sub> SO <sub>4</sub> Mist	Ultra low sulfur diesel fuel with a maximum sulfur content of 0.0015 percent by weight and limit of annual operating hours of 100 hours per year (excluding emergencies)	Maximum sulfur content in fuel of 0.0015 percent by weight <sup>2</sup>
	PM	Ultra low sulfur diesel fuel, combustion control, limit of annual operating hours of 100 hours per year (excluding emergencies)	0.15 g/bhp-hr (NSPS Subpart IIII) <sup>1</sup>
	CO	Good combustion practice and limit of annual operating hours of 100 hours per year (excluding emergencies)	2.6 g/bhp-hr (NSPS Subpart IIII) <sup>1</sup>
	GHG	Use of ultra low sulfur diesel fuel and good combustion practices	Maintain emergency generator in accordance with manufacturer specifications
<b>Cooling Tower</b>	PM	High Efficiency drift eliminators	Drift loss rate design of 0.0005 percent of the circulating water flow rates <sup>3</sup>

<sup>1</sup> Compliance method- diesel engine vendor certification

<sup>2</sup> Compliance method- fuel supplier analyses for sulfur content

<sup>3</sup> Compliance method- cooling tower vendor certification

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**TABLE 3 - Summary of BACT Requirements for Material Handling Operations**

<b>Material Handling Operations</b>			
Ash and Metal Recovery Building	PM/ PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• Wet Scrubber</li> </ul>	Design outlet concentration of 0.001 gr/dscf
Fly Ash Surge Bin	PM/ PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• Wet Scrubber</li> </ul>	Design outlet concentration of 0.001 gr/dscf
Conveyors/ Transfer Points	PM/ PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• Vented to ash and metal recovery building scrubber or fly ash surge bin scrubber</li> </ul>	Design outlet concentration of 0.001 gr/dscf
Reagent Storage Silos	PM/ PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• Bin Vent Filters</li> </ul>	Design outlet concentration of 0.01 gr/dscf
Roads	PM/ PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• Fugitive emission control strategies include sweeping, water spraying, ash building exit tire wash, and reducing vehicle speed</li> </ul>	Fugitive emission control strategies

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**TABLE 4 - Facility-wide Emission Limits**

<b>POLLUTANT</b>	<b>Emission Limits for MWCs, Combined (tons per year)</b>	<b>Facility-wide Emission Limits (tons per year)</b>
Particulate Matter (PM)	26.8	36.3
Particulate Matter (PM10) Filterable + Condensable	64.2	68.1
Sulfur Dioxide (SO <sub>2</sub> )	99.4	99.4
Nitrogen Oxides (NO <sub>x</sub> )	229.5	229.8
Carbon Monoxide (CO)	248.0	248.3
Sulfuric Acid Mist (SAM)	39.1	39.1
Hydrogen Chloride (HCl)	80.8	80.8
Hydrogen Fluorides (HF)	9.5	9.5
Lead (Pb)	0.20	0.20
Cadmium (Cd)	0.027	0.027
Mercury (Hg)	4.6E-02	4.6E-02
MWC Organics (Measured as Dioxins/Furans)	3.5E-05	3.5E-05
Greenhouse gases (CO <sub>2</sub> e)	851,051	851,144