

Frederick/Carroll County Renewable Waste-to-Energy Facility
New Source Review Approval Conditions
NSR Approval NSR-2014-01

Part A	General Provisions
Part B	Applicable Regulations
Part C	Lowest Achievable Emission Rate and Offset Requirements
Part D	Testing Requirements
Part E	Monitoring Requirements
Part F	Compliance Demonstration
Part G	Reporting and Recordkeeping Requirements

This New Source Review (NSR) Approval covers the following equipment:

Equipment Description	MDE Registration Number
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 applications 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) Non-Attainment New Source Review (NSR) Approval application received on February 15, 2011;
 - (c) 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 MWC
 - Two Baghouses for MWCs
 - Two Selective Catalytic Reduction (SCR) systems for MWCs

Frederick/Carroll County Renewable Waste-to-Energy Facility
New Source Review Approval Conditions
NSR Approval NSR-2014-01

- One 305 HP Emergency Firewater Pump 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
 - One Wet Scrubber for Ash and Metal Recovery Building
 - Two Reagent Silos Equipped with Bin Vent Filters
- (d) Response to ARMA comments and corrected pages to the application received on September 16, 2011 and May 23, 2012; and
- (e) Documentation certifying that other sources owned by the Northeast Maryland Waste Disposal Authority (NEA) in the State of Maryland are in compliance with all applicable regulations, received March 29, 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.

Frederick/Carroll County Renewable Waste-to-Energy Facility
New Source Review Approval Conditions
NSR Approval NSR-2014-01

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 MDE-ARMA, 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 26.11.02.09A, which states that the Permittee cannot construct a source without first obtaining the necessary permits to construct and approvals from the MDE-ARMA.
3. COMAR 26.11.17.03A which prohibits the construction or modification of any major stationary sources in a non-attainment area without first obtaining all permits to construct and approvals from the MDE-ARMA.
4. COMAR 26.11.17.03B(2) which requires the Permittee to meet an emission limitation which specifies the lowest achievable emission rate (LAER).
5. COMAR 26.11.17.03B(3)(a) which requires the Permittee to meet a nitrogen oxides (NO_x) emission offset ratio of 1.3 to 1.

**PART C – LOWEST ACHIEVABLE EMISSION RATE (LAER)
AND OFFSET REQUIREMENTS**

1. To meet Lowest Achievable Emission Rate (LAER) requirements when burning municipal solid waste (MSW) (alone or in conjunction with natural gas, tires, or acceptable sewage sludge), emissions of nitrogen oxides (NO_x) shall not exceed 45 ppmvd on a 24-hour block average, corrected to 7% O₂. These limits are to be achieved through the installation, maintenance and operation of the following equipment:
 - (a) A selective catalytic reduction (SCR) system with process steam reheat;
 - (b) Flue gas recirculation (FGR);

Frederick/Carroll County Renewable Waste-to-Energy Facility
New Source Review Approval Conditions
NSR Approval NSR-2014-01

- (c) Water-cooled combustion grate; and
 - (d) Combustion air optimization.
2. To meet LAER requirements, emissions from the nominal 305 HP emergency firewater pump diesel engine shall be designed to meet an emission limitation of 3.0 g/bhp-hr for total NO_x and non-methane hydrocarbons. In addition, LAER shall include a limitation on the hours of operation to 100 hours per year, excluding emergencies, and the implementation of good combustion practices.
 3. The premises-wide emissions from the Frederick/Carroll County Renewable Waste-to-Energy Facility (FCCRWTE) shall not exceed 229.8 tons of NO_x for any consecutive rolling 12-month period.
 4. In accordance with COMAR 26.11.17.03B(3), the FCCRWTE, which is located in a marginal ozone non-attainment area, shall obtain offsets for 229.8 tons per year of NO_x emissions at an offset ratio of 1.3:1 or a total of 298.7 tons per year from a marginal or a higher ranking ozone non-attainment area.
 5. In accordance with COMAR 26.11.17.03B(5), the NO_x offsets of 298.7 tons per year shall be federally enforceable before construction of the project is commenced.
 6. In accordance with the EPA Final Rule for Implementation of the NSR Program for PM_{2.5} (May 16, 2008), emissions of PM_{2.5} must be less than 100 tons for any consecutive rolling 12 month period.

PART D – TESTING REQUIREMENTS

1. Compliance stack testing of the combustors shall be conducted within 180 days after initial startup to quantify NO_x emissions and demonstrate compliance with the LAER emission limitation. Emissions of NO_x shall be determined based on the 24-hour daily arithmetic average of the hourly emission concentrations from the CEMS. Initial performance tests shall comply with applicable requirements outlined in 40 CFR 60.59b(f).
2. At least 30 days prior to conducting any compliance stack test, the Permittee shall submit a test protocol to MDE-ARMA for review and approval.
 - a) Compliance stack testing 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;

Frederick/Carroll County Renewable Waste-to-Energy Facility
New Source Review Approval Conditions
NSR Approval NSR-2014-01

- b) 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 stack tests shall be used to establish the appropriate ranges for good combustion operating parameters for reducing air emissions from the municipal waste combustor.
4. During the required stack emission testing, the MWCs shall operate at least 90% or higher of its rated 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 fuel usage rate of fuel consumed by the emission source during the testing period, millions Btu/hr; 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.

PART E – MONITORING REQUIREMENTS

1. The Permittee shall use a continuous emissions monitoring system (CEM) to monitor NO_x emissions from each municipal waste combustor.
2. The Permittee shall install, operate, maintain, and calibrate the CEM 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. The CEMs shall be certified within 180 days of the start-up of the waste to energy facility unless the Permittee applies for and obtains an extension granted by MDE-ARMA.
3. The Permittee shall install, calibrate, maintain, and operate a meter to monitor exhaust flow rates in the flue gas of each combustor.

Frederick/Carroll County Renewable Waste-to-Energy Facility
New Source Review Approval Conditions
NSR Approval NSR-2014-01

4. The CEMs shall be certified within 180 days of the commencement of operation of the 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 CEM system for NO_x, the Permittee shall use the CEM systems to assess compliance with the NO_x emission limit.

Note: 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".

2. In the absence of reliable CEM data for the MWCs, the Permittee shall demonstrate compliance with the NO_x emission limits by using emission factors established during stack emission testing or any other method approved by MDE-ARMA.

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 emissions of NO_x 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;
 - (g) All CEM emission monitoring data;
 - (h) All CEM certification and calibration results;

Frederick/Carroll County Renewable Waste-to-Energy Facility
New Source Review Approval Conditions
NSR Approval NSR-2014-01

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) Summarizes the monthly and consecutive rolling 12-month total hours of operation, fuel consumption and total emission of NO_x separately for the MWCs and the emergency generator.
 - (b) The cause, time periods and magnitude of all emissions which exceed the applicable emissions standards, including start-up and shut-down phases.
 - (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 emission 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;
 - (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