EXHIBIT G

Maryland
Department of
the Environment

Larry Hogan, Governor
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State of Maryland
0.075 ppm 8-Hour Ozone
Nitrogen Oxide
Reasonably Available Control Technology
(NOx RACT)
State Implementation Plan

SIP Number: 18-04

July 2, 2018

Prepared for:

U.S. Environmental Protection Agency

Prepared by:

Maryland Department of the Environment

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1.0 INTRODUCTION

On March 12, 2008, the United States Environmental Protection Agency (EPA) announced its revisions to the National Ambient Air Quality Standards (NAAQS) for ozone.[1] This action revised the primary and secondary standards to a level of 0.075 parts per million (ppm) over an 8-hour period. The EPA's final rule *Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements* set out the requirements for Reasonable Available Control Technology (RACT) State Implementation Plans[2].

This document consists of Maryland's State Implementation Plan (SIP) Revision developed for the purpose of meeting the RACT requirements set forth by the Clean Air Act (CAA), as the requirements apply to the 0.075 ppm 8-hour ozone National Ambient Air Quality Standard (NAAQS). This document is hereafter referred to as "Maryland's 8-hour Ozone NOx RACT SIP", or simply as "the NOx RACT SIP." This document is a revised and updated version of the RACT SIP that Maryland submitted in 2011, in response to the 1997 0.080 ppm 8-hr ozone standard.

Background and requirements

Ground level ozone, one of the principal components of "smog," is a serious air pollutant that harms human health and the environment. High levels of ozone can damage the respiratory system and cause breathing problems, throat irritation, coughing, chest pains, and greater susceptibility to respiratory infection. High levels of ozone also cause serious damage to forests and agricultural crops, resulting in economic losses to logging and farming operations.

Ozone is generally not directly emitted to the atmosphere; rather it is formed in the atmosphere by photochemical reactions between volatile organic compounds (VOC) and oxides of nitrogen (NO_x) in the presence of sunlight. Consequently, in order to reduce ozone concentrations in the ambient air, the CAA requires all nonattainment areas to apply controls on VOC/NO_x emission sources to achieve emission reductions. This SIP discusses the controls applied to NOx emissions sources.

Maryland's Ozone Designation

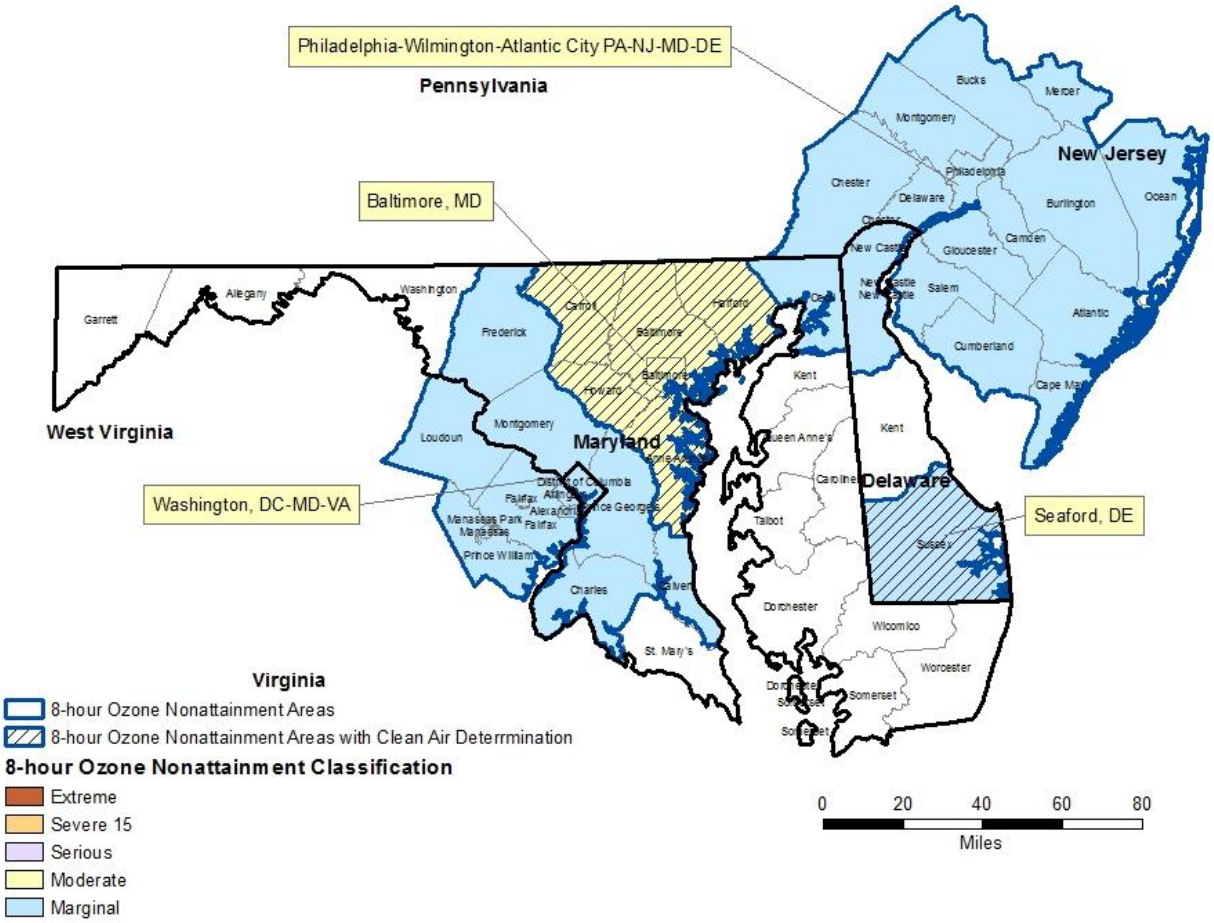
On May 21, 2012, EPA designated three areas in Maryland as "nonattainment" under the 8-hour ozone NAAQS[3]. These nonattainment areas are; the Baltimore Nonattainment Area (classified as Moderate), the Washington D.C. Nonattainment Area (Marginal), and the Philadelphia Nonattainment Area (Marginal). All other remaining Maryland counties are part of the Ozone Transport Region (OTR). Please reference Figure 1 below.

[1] 73 FR 16436; published March 27, 2008; effective May 27, 2008

[2] 80 FR 12264, published March 6, 2015; effective April 6, 2015.

[3] 77 FR 30088, published May 21, 2012; effective July 20, 2012.

Figure 1: Maryland/Washington D.C./Virginia/Delaware 8-hour Ozone Nonattainment Areas (2008 Standard), 2/13/2017[4]



CAA RACT Requirements

The U.S. Environmental Protection Agency (EPA) has defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility"[5]. Section 182(b)(2) of the CAA, applies RACT to VOC sources in moderate or worse ozone nonattainment areas around the country. Under CAA Section 184(b)(1)(B), requirements comparable to those established under Section 182(b)(2) are applicable to all areas in ozone transport regions. Under CAA Section 184(b)(2) any stationary source with a potential to emit at least 50 tons per year of VOCs is subject to RACT under CAA Section 182(b)(2)(C) if located in the following portions of ozone transport regions: those designated attainment; or, designated nonattainment and classified as either marginal or moderate nonattainment.[6] Under Section 182(f), the CAA establishes that Subpart 2 requirements applicable to major stationary sources of VOCs are also applicable to major stationary sources of

[4] https://www3.epa.gov/airquality/greenbook/mddcvade8_2008.html

[5] 44 FR 53761 and 53762, September 17, 1979

[6] Nonattainment areas classified as serious or worse must implement RACT on stationary sources with a potential emit of at least 50 tons per year of VOCs irrespective of location within or outside an ozone transport region.

NO_x. However, the threshold defining a major stationary source of NO_x within ozone transport regions remains at a potential to emit at least 100 tons per year of NO_x in areas designated attainment and in nonattainment areas classified as marginal or moderate.[7]

Under Section 183 of the CAA, EPA was required to issue by certain timeframes several guidance documents that would help states meet the requirements of Section 182(b)(2). This requirement upon EPA includes developing Alternate Control Techniques (ACT) documents for controls of NO_x emissions from stationary sources.
Information in ACT documents is available to states to consider as they establish controls on relevant NO_x sources in their moderate or worse nonattainment areas. In areas with continuing nonattainment problems, such as the Baltimore Nonattainment Area, more stringent controls have been adopted as RACT or as beyond RACT.

Major Source Threshold Levels

Maryland is part of the Northeast Ozone Transport Region (OTR) and contains nonattainment areas classified as "moderate" or "marginal". For the purpose of the 2008 8-hour Ozone NAAQS, the threshold for what constitutes a major stationary source of VOCs or NO_x is that required any of the following criteria:

- Due to an area's nonattainment classification under the 2008 8-hour Ozone NAAQS
- Due to its presence in the ozone transport region due to regulations/requirements specified under previous SIP commitments.[8]

Sources in Maryland will continue to be subject to the applicability requirements of COMAR 26.11.09.08A. The regulation applies to a person who owns or operates an installation that causes emissions of NO_x and is located at premises that have total potential to emit:

a) 25 tons or more per year of NO_x and is located in Baltimore City, or Anne Arundel, Baltimore, Calvert, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, or Prince George's counties; or
b) 100 tons or more per year of NO_x and is located in Allegany, Caroline, Dorchester, Garrett, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, Washington, Wicomico, or Worcester counties.

Responsibilities

The agency with direct responsibility for preparing and submitting this document is the Maryland Department of the Environment (MDE), Air and Radiation Administration (ARA), Air Quality Planning Program, Managed by Mr. Brian J. Hug, Program Manager.

[7] 57 FR 55620 at 55622, November 25, 1992.
[8] Under anti-backsliding rules of 40 CFR 51.1105 stationary sources of NO_X below this 100 tons per year threshold remain subject to any applicable regulations for the control of NO_X.

2.0 RACT SIP DETERMINATION

Certification of NO_x RACT

The Maryland Department of the Environment (MDE) has prepared this Reasonably Available Control Technology (RACT) analysis to demonstrate that the State has met its obligation relating to the 2008 8-hour ozone National Ambient Air Quality Standard (NAAQS). MDE is certifying that all RACT regulations adopted to the present date are RACT for the 2008 8-hour ozone NAAQS as they reflect the most current pollution control technologies and economic considerations. Based on the review of current technologies, MDE has found no data indicating that the existing levels of control for these source categories are no longer RACT.

Maryland is also certifying through this SIP submittal that Maryland meets the CAA RACT requirements for NOx sources with potential to emit 100 TPY or more.

This certification is based on the following supporting information: (1) a certification that previously adopted RACT controls in Maryland's SIP and that were approved by EPA under the 1997 8-hour ozone NAAQS are based on the current availability of technically and economically feasible controls and that they continue to represent RACT for 2008 8-hour NAAQS implementation purposes, and (2) the adoption of new or more stringent regulations that represent RACT control levels for certain source categories.

Maryland Small Source Requirement for NO_x

In regulation COMAR 26.11.02 "Permits, Approvals and Registration," Maryland has established a comprehensive review process for minor sources. By keeping the Maryland exemption threshold low, all other sources are included in the review process. The affected minor sources emit well below the major source. The requirements of COMAR 26.11.02 ensure that all major sources are controlled by RACT at a minimum.

Overview of COMAR Requirements

Code of Maryland Regulations (COMAR) 26.11.09.08 represent Maryland's NO_x RACT controls that have been implemented and were previously approved into the Maryland SIP under the 1-hour ozone NAAQS and 1997 8-hour ozone NAAQS. These regulations address NOx RACT for major NOx sources, including but not limited to: fuel burning equipment, space heaters, glass melting furnaces, and industrial furnaces. A full listing of the major (high impact) NOx sources in Maryland and the corresponding RACT regulate on is included in Appendix B.

Maryland also implemented additional NOx controls as part of its SIP necessary to meet other Federal and state requirements, and which as recently revised represent NOx RACT to date under the 2008 8-hour ozone NAAQS. Certain NOx requirements of COMAR 26.11.29 and 26.11.30 currently ensure that affected cement manufacturing facilities and natural gas compressor stations achieve RACT level reductions of at least a 30 percent and 82 percent reduction, respectively, from uncontrolled levels (70 FR at 71653, November 29, 2005).

Hospital, medical, and infectious waste incinerators (HMIWI) are subject to the RACT requirements under 26.11.08.08-2 and municipal waste combustors (MWC) are subject to the RACT requirements under 26.11.08.07 and 26.11.08.08. Kraft pulp mills are subject to RACT requirements that were recently adopted into COMAR 26.11.14 & COMAR 26.11.40. Portions of COMAR 26.11.08.08-2, 26.11.08.08, and 26.11.08.07 are being submitted for approval into the SIP. The largest coal-fired electric generating units are subject to SIP-approved NOx requirements that were recently adopted into COMAR under 26.11.38, some of which MDE is certifying represent NOx RACT to date.

Table 1: Maryland NO_x RACT Regulations under the 2008 8-Hour Ozone NAAQS

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Fuel-Burning Equipment Located at Major Sources – General Requirements and Conditions	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) Document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08A&B MDE confirms that there are no additional sources at this time seeking alternative standards and that MDE continues to rely on any alternative standards that have been previously approved into the SIP.	NOx RACT standards apply to tangentially or wall-fired fuel-burning units, based on fuel: Gas only- 0.20 pounds of NO_x per Million Btu per hour (lb/MMBTU) Gas/Oil: 0.25 lb/MMBTU Coal (dry bottom): 0.38 lb/MMBTU/hr Coal (wet bottom): 1.0 lb/MMBTU/hr	3/28/2018, 83 FR 13192	11/24/2003	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

[9] Because SIP 15-04 was the last amend a Section of Regulation .08, the overall COMAR 26.11.09.08 Control of NOx Emissions from Major Sources approval date matches the approval of SIP 15-04

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Fuel-Burning Equipment with a Rated Heat Input Capacity of 250 MMBtu/hr or Greater	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) Document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08C	NOx standards applicable by type of unit and/or fuel. Coal Tangentially fired: 0.70 lb/MMBTU (for high heat release units); 0.45 lb/MMBTU (all other units) Cyclone: 0.70 lb/MMBTU/hr from May 1 to September 30, and 1.5 lb/MMBTU for the reaminder of the year. Cell burner: 0.6 lb/MMBTU Wall fired: 0.80 lb/MMBTU (for high heat release units); 0.50 lb/MMBTU (all other units) Oil fired or gas/oil fired: 0.30 lb/MMBTU	3/28/2018, 83 FR 13192	3/3/2014	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has no significant change in RACT control technology for the covered sources. In addition, Maryland has adopted more stringent NOx emissions limits in COMAR 26.11.38 for several of the units in this category, which is also certifying as RACT. See Section 2.1.1 "Implementation of Non-CTG Specified NOx Controls" for more details.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Fuel-Burning Equipment with a Rated Heat Input Capacity of Less than 250 MMBtu/hr and Greater than 100 MMBtu/hr	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08D	For coal fired fuel-burning equipment: The installation and operation of the affected unit in accordance with the manufacturer's specifications, combustion modifications, or other technologies to meet an emission rate of 0.65 lb/MMBTU. For all other: compliance with 26.11.09.08B(1)(c).	3/28/2018, 83 FR 13192	11/11/2002	Yes. This provision fully implements RACT NOx controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no updated ACT and no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Fuel-Burning Equipment with a Rated Heat Input Capacity of 100 MMBtu/hr or Less	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08E	Applicable NOx RACT standards include: Performing a combustion analysis for each installation at least once each year and optimizing combustion based on the analysis.	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Space Heaters	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08F	Applicable NOx RACT standards include: Developing an operating and maintenance plan to minimize NO_x emissions based on the recommendations of equipment vendors and other information including the source's operating and maintenance experience; implementing the operating and maintenance plan.	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Fuel-Burning Equipment with a Capacity Factor of 15 Percent or Less	1. Alternative Control Techniques document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994; 2. Alternative Control Techniques Document: NOx Emissions from Stationary Gas Turbines, US EPA, EPA-453/R-93-007, January 1993; 3. NESCAUM Stationary Source Committee Recommendation on NOx RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines 9/18/1992; 40 4. NESCAUM Status Report on NOx Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, December 2000; 5. USEPA Summary of NOx Control Technologies and their Availability and Extent of Application, February 1992; and 6. USEPA Summary of State/Local NOx Regulations for Stationary Sources, 2004.	26.11.09.08G(1)	Applicable NOx RACT standards include: Providing certification of the capacity factor of the equipment to the Department in writing; for fuel-burning equipment that operates more than 500 hours during a calendar year, performing a combustion analysis and optimize combustion at least once annually.	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Combustion Turbines with a Capacity Factor Greater than 15 Percent	1.Alternative Control Techniques document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994; 2. Alternative Control Techniques Document: NOx Emissions from Stationary Gas Turbines, US EPA, EPA-453/R-93-007, January 1993; 3. NESCAUM Stationary Source Committee Recommendation on NOx RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines 9/18/1992; 40 4. NESCAUM Status Report on NOx Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, December 2000; 5. USEPA Summary o f NOx Control Technologies and their Availability and Extent of Application, February 1992; and 6. USEPA Summary of State/Local NOx Regulations for Stationary Sources, 2004.	26.11.09.08G(2)	To meet an hourly average NO_x emission rate of not more than 42 ppm when burning gas or 65 ppm when burning fuel oil (dry volume at 15 percent oxygen).	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Hospital, Medical, and Infectious Waste Incinerators (HMIWI)	EPA's 2009 revision to 40 CFR Part 60, Subpart Ec, and "Standards of Performance for Hospital/Medical/Infectious/Waste Incinerators." EPA approved regulations on 11/28/2016 [81 FR 85457] (as part of 111(d)/State Plan)	26.11.08.01, 26.11.08.02, 26.11.08.08-2 (As redacted in Appendix D)	NO_x emissions from hospital, medical, and infectious waste incinerators as defined in COMAR 26.11.08.01B may not exceed NO_x emission standards in COMAR 26.11.08.08-2B(1) (190 ppm 24-hour average for small and medium HMIWIs and 140 ppm 24-hour average for large HMIWIs) as applicable.	This regulation is being submitted to EPA for SIP approval. (See section 2.1.1)	4/2/2012	Yes. This provision fully implements NOx RACT controls over the targeted sources.
Municipal Waste Combustors (MWC)	1.EPA's 2007 Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Large Municipal Waste Combustors 2. Federal Plan for Small Municipal Waste Combustion Units Constructed on or Before August 30, 1999, 40 CFR 62 Subpart JJJ EPA approved regulations on 12/26/2017 [82 FR 60872] (as part of 111(d)/State Plan)	26.11.08.01, 26.11.08.02, 26.11.08.07, 26.11.08.08 (As redacted in Appendix E)	NO_x emissions from municipal waste combustors may not exceed 24- hour average NO_X emissions of 205 ppmv. A person may not operate a municipal waste combustor that has a burning capacity of 35 tons or more per day and less than or equal to 250 tons per day that was constructed on or before August 30, 1999 which results in violation of the provisions of 40 CFR 62 Subpart JJJ.	This regulation is being submitted to EPA for SIP approval. (See section 2.1.1)	2/15/2016	Yes. This provision fully implements NOx RACT controls over the targeted sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Glass Melting Furnaces	EPA's NSPS for Glass Plants (40 CFR 60, subpart CC) and NESHAP for area source Glass Plants (40 CFR 63, subpart SSSSSS)	26.11.09.08I	Optimization of combustion by performing daily oxygen tests and maintaining excess oxygen at 4.5 percent or less.	3/28/2018, 83 FR 13192	7/20/2015	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.
Industrial Furnaces and Other Miscellaneous Installations that Cause Emissions of NO_x	Alternative Control Techniques document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994	26.11.09.08J	NOx RACT standards for any installations other than fuel-burning equipment include: Maintaining good operating practices as recommended by the equipment vendor to minimize NO_x emissions; and burning only gas in each installation, where gas is available, during the period May 1 through September 30 of each year.	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Kraft Pulp Mills (Prior to 3/3/2014 Kraft Pulp Mills NOx RACT was found under 26.11.09.08C(2)(h))	Federal standards for NOx emissions from boilers at pulp and paper facilities (Alternative Control Techniques document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994)	26.11.14.01; 26.11.14.02; 26.11.14.07 & 26.11.40	NOx RACT standards applicable to any fuel burning equipment at Luke Kraft pulp mill. During the period May 1 through September 30 of each year: 0.70 lb/MMBTU and NOx ozone season emission cap of 656 tons. During the period October 1 through April 30 of each year: 0.99 lb/MMBTU, 30 day rolling average.	7/17/2017, 82 FR 32641 (26.11.14) SIP #18-03 for 26.11.40 & 26.11.14.07 was submitted to EPA for approval on 5/17/18	26.11.14 - 5/9/2016 26.11.40 - 4/23/18	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard (as COMAR 26.11.09.08C(2)(h)) and although re-codified, the control requirements remain the same.. After EPA's approval there has been no significant change in RACT control technology for the covered sources. The new action in SIP #18-03 removes 95 NOx allowances under 26.11.14.07.
Portland Cement Manufacturing Plants	EPA's 2004 Alternative Control Techniques (ACT) for NOx Emission from Cement Manufacturing	26.11.30.01, .02, .03, .07, and .08	NOx RACT standards applicable to a cement kiln at a Portland cement manufacturing plant: On or after April 1, 2017: For dry long kilns: 3.4 lb of NOx/ton of clinker For pre-calciner kilns: 2.4 lb of NOx/ton of clinker Both of Maryland's cement plants are now of the pre-calciner type kiln.	3/28/2018, 83 FR 13192	7/20/2015	Yes. This provision fully implements NOx RACT controls over the targeted sources. The original NOx control requirements were approved by EPA into the SIP and determined adequate as RACT under the 1997 ozone standard as COMAR 26.11.09.08H(1)&(2). Recent regulatory amendments reflect more stringent RACT level of control than previously adopted as RACT under 1997 ozone standard.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Natural Gas Compression Station Engines	EPA's 1993 Alternative Control Techniques for Stationary Reciprocating Internal Combustion Engines	26.11.29.02C(2) (Prior to 7/20/2015 Internal Combustion Engines at NG Pipeline Stations NOx RACT was found under 26.11.09.08I)	Applicable NOx RACT standards depend on the types and size of engine.	3/28/2018, 83 FR 13192	7/20/2015	Yes. This provision fully implements NOx controls over the targeted sources. The original NOx control requirements were approved by EPA into the SIP and determined adequate as RACT under the 1997 ozone standard as COMAR 26.11.09.08I and although re-codified, the control requirements remain the same. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?
Additional NOx RACT requirements for Coal-Fired EGUs		26.11.38 EPA SIP-Approved Version See section 2.1.1		5/30/2017, 82 FR 24546	8/31/2015	Maryland has adopted more stringent NO_X limits for coal-fired electric generating units (EGUs) with a capacity greater than or equal to 25 MW. This subset of fuel-burning equipment is regulated under the SIP-approved version of COMAR 26.11.38. See Section 2.3.1 of this document for details. This regulation requires the lowest emission limitations that the covered sources are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. The Department determines that these requirements satisfy the current RACT requirements under the 2008 ozone NAAQS.

2.1.1 Implementation of Non-CTG Specified NOx Controls

As indicated in Table 1 above, Maryland is certifying that the framework of the above regulations contain provisions implementing adequate NOx RACT controls under the 2008 ozone standard. The majority of the non-CTG specified rules were developed for meeting requirements of the CAA Section 182(b)(2), if not other, related federal regulations regulating NOx emissions.

Maryland has also developed COMAR regulations and other controls to implement additional NOx controls rules and requirements to aid in maintenance of the 1-hour standard and attainment of the 8-hour NAAQS.

EPA has defined RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53762). This definition indicates that the RACT requirements must include compliance with the lowest emission levels that were achieved in the past, are achieved at present, or will be achieved in the future under facility's operational limitations (such as operational permits) and equipment standards that were previously applicable, are presently applicable, or will become applicable in the future, respectively. The MDE believes that the development of its non-CTG specified NOx rules reflects exactly the EPA's RACT definition, and MDE has determined that those rules are necessary for Maryland to attain the 2008 ozone NAAQS.

The non-CTG NOx rules are discussed in details below.

DETERMINATION OF CERTAIN PROVISIONS OF COMAR 26.11.38 "CONTROL OF NOX EMISSIONS FROM COAL-FIRED ELECTRIC GENERATING UNITS" AS RACT

COMAR 26.11.38 contains stringent NOx control requirements for certain coal-fired EGUs that MDE determined represents NOx RACT level of control. MDE is therefore certifying that the NOx control requirements in 26.11.38 of this regulation are adequate to meet RACT under the 2008 8-hour ozone standard. The regulation can be found at the location provided below and also in Appendix C.

https://www.epa.gov/sites/production/files/2017-07/documents/md_26.11.38.pdf

This regulation became effective as an emergency regulation on 5/1/2015 and was permanently adopted on 8/31/2015 to limit NOx emission rates of each affected electric generating unit to minimize NOx emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with technological limitations and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation while burning any coal.

The following provisions adequately establish NOx RACT level reductions for affected units.

(1) As provided in 26.11.38.01, "Affected electric generating unit" means any one of the following coal-fired electric generating units:
    i. Brandon Shores Units 1 and 2;
    ii. C.P. Crane Units 1 and 2;
    iii. Chalk Point Units 1 and 2;
    iv. Dickerson Units 1, 2, and 3;
    v. H.A. Wagner Units 2 and 3;
    vi. Morgantown Units 1 and 2; and
    vii. Warrior Run.

(2) Under 26.11.38.03A(1), the regulation required the owner or operator of an affected electric generating unit (the unit) to submit a plan to the Department and EPA for approval that demonstrates how each affected electric generating unit will operate installed pollution control technology and combustion controls to meet the above optimization requirements. The plan must include a summary of the data that will be collected to demonstrate compliance with the regulation and must cover all modes of operation, including but not limited to normal operations, start-up, shut-down, and low load operations.

(3) As required by 26.11.38.03A(2), beginning on May 1, 2015, for each operating day during the ozone season, the owner or operator of an affected electric generating unit shall minimize NOx emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation while burning any coal.

(4) 26.11.38.03B sets up stringent NO_X emission rates:
    a. The owner or operator of an affected electric generating unit equipped with a fluidized bed combustor shall not exceed a NOx 24-hour block average emission rate of 0.10 lbs/MMBtu.

b. Rolling system-wide 30-day NOx emission rate of 0.15 lbs/MMBtu.

(5) As provided in 26.11.38.04, affected units must demonstrate compliance with the control requirement to minimize NO_X emissions in 26.11.38.03A(1)-(2) by operating the units at levels that are at or below the following 24-hour block average rates:

Affected Unit	24-Hour Block Average NO_x Emissions in lbs/MMBtu
Brandon Shores	
Unit 1	0.08
Unit 2 <650 MWg ≥650 MWg	 0.07 0.15
C.P. Crane	
Unit 1	0.30
Unit 2	0.28
Chalk Point	
Unit 1 only	0.07
Unit 2 only	0.33
Units 1 and 2 combined	0.20
Dickerson	
Unit 1 only	0.24
Unit 2 only	0.24
Unit 3 only	0.24
Two or more units combined	0.24
H.A. Wagner	
Unit 2	0.34
Unit 3	0.07
Morgantown	
Unit 1	0.07
Unit 2	0.07

If these emissions levels are exceeded, the facility shall submit a unit-specific report as specified in 26.11.38.04A(3).

(6) 26.11.38.04 establishes standards reporting requirements for the covered EGUs.

a. Reporting Schedule.

i. Beginning 30 days after the first month of the ozone season following the effective date of this chapter, each affected electric generating unit subject to the requirements of this chapter shall submit a monthly report to the Department detailing the status of compliance with this chapter during the ozone season.

ii. Each subsequent monthly report shall be submitted to the Department not later than 30 days following the end of the calendar month during the ozone season.

b. Monthly Reports During Ozone Season. Monthly reports during the ozone season shall include:

i. Daily pass or fail of the NO_x emission rates under Regulation .04A(2) of this chapter;

ii. The reporting information as required under Regulation .04A(3) of this chapter, and COMAR final text effective 8/31/15;

iii. The 30-day system-wide rolling average emission rate for each affected electric generating unit to demonstrate compliance with Regulation .03B(1)of this chapter;

Affected Sources:

The 14 coal-fired electric generating units identified as affected sources in this regulation are the largest contributors of NO_X from major stationary sources in Maryland. The affected sources are equipped with either the best post-combustion NO_X control technology (SCR) or the second-best post combustion NO_X control technology (SNCR). Even with the application of advanced control technologies, this subset of major sources typically combine to emit more than 50% of the total NO_X mass from major stationary sources in Maryland.

Because the NO_X control devices are already installed on the units, the optimization of the control devices resulting in the NO_X rates set forth in the regulation allow for an economically feasible application of the controls and a high potential for NO_X reductions.

The MDE incorporates hereby the following into this RACT SIP revision for the "affected generating units", listed in (1) above, to meet the RACT requirements under the 2008 ozone standard:

i. The definitions and applicability provisions of COMAR 26.11.38.01 and .02. as described in (1) above;

ii. The requirement to minimize NO_X emission by operating and optimizing the use of all installed pollution control technology and combustion controls in COMAR 26.11.38.03A, as summarized in (2) & (3) above;

iii. The NOx limits as specified in COMAR 26.11.38.03B, C & D as summarized in (4) above;

iv. The compliance demonstration requirements as specified in COMAR 26.11.04 and summarized in (5) above;

v. The reporting requirements as specified in COMAR 26.11.05 and summarized in (6) above.

DETERMINATION OF CERTAIN PROVISIONS OF COMAR 26.11.08.08-2 FOR HOSPITAL, MEDICAL, AND INFECTIOUS WASTE INCINERATORS (HMIWI) AS RACT

COMAR regulation 26.11.08.08-2 contains NOx control requirements for HMIWIs that achieve NOx RACT level reductions. MDE is therefore certifying that the NOx control requirement in 26.11.08.08-2 is adequate to meet RACT under the 2008 8-hour ozone standard. The provisions of this regulation, as shown in Appendix D, cover applicability, emissions limits, and compliance demonstration requirements.

Incinerators that burn hospital waste consisting of discards generated at a hospital, and medical/infectious waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research, or in the production or testing of biologicals are HMIWIs. Requirements for HMIWIs are divided into categories by size, location (rural/urban) and date of construction/modification.

U.S. Army Fort Detrick and Curtis Bay Energy are the two HMIWI facilities in Maryland. To the best of our ability, MDE has not identified any small rural HMIWI facilities in Maryland.

Actual Facility NO_X Emissions

NO_X Emissions (tpy)							
Year / Facility	2016	2015	2014	2013	2012	2011	2010
Curtis Bay Energy	39.60	42.89	42.89	41.35	50.33	50.33	47.14
Fort Detrick	0.401	0.440	0.208	0.840	0.672	0.534	2.073

U.S. Army Fort Detrick

US Army Fort Detrick operates two large HMIWI units, each rated at 1,000 lbs/hr each equipped with an emissions control system and a waste heat recovery boiler, located in Building 393.

The two HMIWI units are dual-burn incinerators with a primary and secondary chamber. These incinerators use natural gas as auxiliary fuel, with No. 2 fuel oil for backup, and are equipped with rotary atomizing (wet) scrubbers and cyclonic separators for air pollution control. Each incinerator has a primary stack and they both share a dump stack which will be used when the primary stacks are not operational or in the case of an emergency situation. The rotary atomizing scrubber, manufactured by Emcotek, Inc., is an emission control device that uses a water spray from a high velocity rotor (rotating at several hundred feet per second) to effect particulate and acid gas emissions control. The current drawn by the rotor motor is continuously monitored and is regarded as an operating parameter equivalent to pressure drop across a venturi scrubber.

As shown above the two HMIWI units have emitted less than one ton of NO_X on average per year over the last seven years making the installation of additional NO_X RACT control technologies infeasible.

Curtis Bay Energy

Curtis Bay Energy (formerly Phoenix Services) operates two large commercial HMIWI units with a permitted total combined capacity of 150 tons per day.

The HMIWI units are equipped with secondary and tertiary combustion chambers, heat recovery boiler, a dry injection acid gas scrubber, a powder activated carbon injection (PAC) system, a fabric filter with passive dioxins/furans emissions control and a selective non-catalytic reduction (SNCR) system for NOx.

The two HMIWI units comprise the vast majority of the facility emissions. As shown above the two HMIWI units emit approximately 45 tons of NO_X on average per year over the last seven years.

Because the NO_X control device is already installed on the units, the optimization of the control device resulting in the NO_X rates set forth in the regulation allow for an economically feasible application of the controls and a high potential for NO_X reductions.

U.S. Army Fort Detrick and Curtis Bay Energy are the two HMIWI facilities in Maryland with HMIWI unit installation dates of 1995 and 1991, respectively. To the best of our ability, MDE has not identified any small rural HMIWI facilities in Maryland.

The MDE incorporates hereby the following into this RACT SIP revision for the HMIWI, to meet the RACT requirements under the 2008 ozone standard:

COMAR regulation 26.11.08.08-2 as shown in Appendix D and
MDE certifies, to the best of our ability, that no small rural HMIWIs have been identified within Maryland.

DETERMINATION OF CERTAIN PROVISIONS OF COMAR 26.11.08 FOR MUNICIPAL WASTE COMBUSTION (MWC) AS RACT

COMAR regulations 26.11.08.07 and 26.11.08.08 contain NOx control requirements for different sizes of MWCs that achieve NOx RACT level reductions. MDE is therefore certifying that the NOx control requirements in 26.11.08.07 and 26.11.08.08 are adequate to meet RACT under the 2008 8-hour ozone standard. The regulations can be found in Appendix E.

Maryland MWCs are in two size categories. A large MWC is an existing municipal waste combustor for which construction began on or before September 20, 1994 and that has a capacity to burn 250 tons per day of municipal waste as defined under 40 CFR 60.32b. An MWC with a capacity range of 35 tons or more per day and less than 250 tons per day is also subject to standards and requirements.

Small Municipal Waste Combustion Unit Category
One facility is subject to 26.11.08.07 requirements: U.S. Army Garrison at Fort Detrick Area A. The Harford County Resource Recovery Facility, reported in previous RACT documents, has closed.

The actual NO_X emission from the small municipal waste combustion facility in Maryland is listed below:

Actual Facility NO_X Emissions

NO_X Emissions (tpy)							
Year / Facility	2016	2015	2014	2013	2012	2011	2010
Fort Detrick Area A	2.666	3.342	0.208	.840	1.527	1.513	2.073

U.S. Army Fort Detrick

Two (2) small municipal waste combustion units, ECP Model 2500T, each rated at 39 ton/day and each equipped with an emissions control system and a waste heat recovery boiler, located in Bldg. 393.

Emission Units B1 and B4 were first registered with the Department in 1975. The incinerators use natural gas as auxiliary fuel, with No. 2 fuel oil for backup. The units were originally designated as general refuse waste incinerators and nominally rated at 2,000 pounds per hour. Each incinerator is equipped with two primary chamber burners and one secondary chamber burner with venturi scrubbers and cyclonic separators for air pollution control, and operate as starved-air units. Each incinerator is equipped with two waste heat recovery boilers. The emissions control system for these incinerators was extensively redesigned in order to achieve compliance with the Federal Plan for Small Municipal Waste Combustion Units Constructed on or Before August 30, 1999, 40 CFR 62 Subpart JJJ. The control system on each incinerator includes a quench tower, a rotary atomizing (wet) scrubber, a demister, a fixed bed carbon adsorption system (chiefly for mercury and dioxins/furans emissions control), and two final stages of HVAC-type fiber filters for control of particulates.

The actual capacity for MSW is estimated to be at least 39 tons per day (for 5,000 Btu/lb waste), bringing them into the Small Municipal Waste Combustion Unit category (i.e., 35 tons per day or larger, but less than 250 tons per day). The incinerators qualify as "Class II" incinerators since the facility-wide total capacity for MSW is less than 250 tons per day.

As shown above the two MWC units have emitted less than four tons of NO_X on average per year over the last seven years making the installation of additional NO_X RACT control technologies infeasible.

Large Municipal Waste Combustion Unit Category

Maryland has two large MWCs: Montgomery County Resource Recovery Facility and Wheelabrator Baltimore, L.P.

The actual NOX emissions from the two large municipal waste combustion facilities in Maryland are listed below:

Actual Facility NO_X Emissions

NO_X Emissions (tpy)							
Year / Facility	2016	2015	2014	2013	2012	2011	2010
Wheelabrator Baltimore, L.P.	1141.25	1123.32	1075.76	1066.56	1012.3	1133.54	1077.31
Montgomery County RRF	418	441.17	426.71	387.65	479.26	512.39	499.27

Wheelabrator Baltimore, L.P.

Wheelabrator Baltimore, L.P. (Wheelabrator or the "Company"), formerly known as Baltimore RESCO Company, L.P., operates a municipal solid waste resource recovery facility. The facility consists of three large Frye mass burn waterwall municipal waste combustors each rated at 750 tons per day (TPD) yielding a facility wide capacity of 2,250 TPD. The steam that is generated by the MWCs is either sold to a steam distribution system or used to produce electricity via an on-site steam turbine.

Combustion gases are exhausted through a stack (Emission Point EP1) that contains three flues, one for each of the three MWCs. Each MWC train is equipped with a urea injection selective non-catalytic reduction (SNCR) system to control NOx emissions. Each stack is equipped with a continuous opacity monitoring system (COM) and continuous emission monitoring systems (CEMS) for monitoring the carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen oxides (NOx) content of the stack exhaust gases, as well as an oxygen (O_2) and carbon dioxide (CO2) monitors for monitoring the stack gas dilution. Additionally, SO_2 and O_2 CEMS are located upstream of control devices for determining percent reduction of SO2.

Montgomery County RRF (MCRRF)

The MCRRF consists of three independent combustion trains and has a nominal design capacity of 1,800 tons per day (tpd). The thermal output from the facility is used to generate up to approximately 63 megawatts (MW) of electricity for in-plant needs and sale to an energy broker. Natural gas fired auxiliary burners are used exclusively for unit warmup, startup, and shutdown situations, as well as to maintain optimum combustion when necessary.

Containerized waste is delivered to the facility by rail car from the Montgomery County Solid Waste Transfer Station. Rail car containers are loaded to flatbed trucks and transported to the tipping floor at the MCRRF. The tipping floor area is operated under negative pressure to minimize fugitive odors. The ventilation air is drawn from the tipping floor and ducted into the combustion zones of each furnace.

From the refuse pit waste is fed to the furnace feed hopper where solid waste slides by gravity into the refuse chute. A ram feeder pushes the solid waste onto a grate system. The grate system moves the waste through the furnace as the waste is burned.

The combustion system is comprised of three identical mass-burn, water wall furnaces, each nominally capable of burning 600 tpd of refuse on an annual average basis. Within each train, the refuse is charged onto a reverse reciprocating grate for combustion. The combustion gases in the furnace pass through the radiant, convective and economizer sections of the boiler, and then through the air pollution control system (APC). The APC currently consists of an ammonia injection system for control of NOx (SNCR), a dry scrubber for primary acid gas control and an activated carbon injection system for mercury control in series with a baghouse for removal of particulate matter. Each unit has a furnace dry lime injection system (FDLIS) that is capable of feeding hydrated lime directly into the combustion zone for additional acid gas control on an as needed basis. Ash is mixed with dolomitic lime as necessary. Ash is wetted, and the ash handling systems and storage containers are enclosed to prevent fugitive particulate emissions.

The NO_X standards under COMAR 26.11.08.08 are based on EPA's Maximum Achievable Control Technology (MACT) standard[10] for municipal waste combustion. The MACT standard was published in the Federal Register on May 10, 2006. The MWCs are equipped with SNCR ammonia-injection systems for control of NOx and MCCRF has a Covanta Low NOx system as well, which achieves a 47% NOx reduction. These controls will enable the units to meet the EPA MACT standard.

The MDE incorporates hereby the following into this RACT SIP revision for the Municipal Waste Combustion (MWC), to meet the RACT requirements under the 2008 ozone standard:

COMAR regulation 26.11.08.07 and
COMAR regulation 26.11.08.08 as shown in Appendix E

[10] https://www.gpo.gov/fdsys/pkg/CFR-2016-title40-vol7/pdf/CFR-2016-title40-vol7-part60-subpartCb.pdf

3.0 MDE INTERNAL CONSULTATION PROCESS AND EPA'S RACT/BACT CLEARINGHOUSE

Maryland has roughly 600 high impact facilities that have been permitted by MDE's Air and Radiation Administration (ARA) Permits Program. On an annual basis the MDE Air and Radiation Management Compliance Program performs approximately 2,000 inspections and audits. With the expertise of over 18,000 issued permits, a consultation process with ARMA's Permits and Compliance Programs was conducted during the development of this SIP, for information regarding the potential for RACT enhancement. There were no potential RACT enhancements identified during this consultation process.

As part of its comprehensive review process to assure that all relevant RACT standards have been addressed and met, MDE reviewed EPA's RACT/BACT Clearinghouse database. Through its review, MDE did not observe any discrepancies between the database and the information generated from within the department. Maryland chose several of its largest emission source categories and provided in Appendix A of this report, copies of the RACT/BACT Clearinghouse Data sheets for review.

4.0 REFERENCE DOCUMENTS

Alternative Control Techniques (ACT) Documents and Additional Reference Documents

U.S. EPA's Control Techniques Guidelines documents, Alternative Control Techniques documents, and Additional Reference Documents, cited in this SIP Submittal for Determination of RACT Controls of NO_x Emissions from Stationary Sources, are listed below.

Alternative Control Techniques Documents:

1. Alternative Control Techniques (ACT) document: NO_x Emissions from Process Heaters (Revised), EPA-453/R-93-034, September 1993.
2. Alternative Control Techniques (ACT) document: NO_x Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994.
3. Alternative Control Techniques (ACT) document: NO_x Emissions from Glass Manufacturing, EPA-453/R-94-037, June 1994.
4. Alternative Control Techniques (ACT) document: NO_x Emissions from Utility Boilers, EPA-453/R-94-023, March 1994.
5. Alternative Control Techniques (ACT) document: NO_x Emissions from Stationary Gas Turbines, EPA-453/R-93-007, January 1993.
6. Alternative Control Techniques (ACT) document: NO_x Emissions from Stationary Reciprocating Internal Combustion Engines, EPA-453/R-93-032, 1993.
7. Alternative Control Techniques (ACT) document: NO_x Emissions from Iron and Steel Mills, EPA-453/R-94-065, September 1994.
8. NO_x Control Technologies for the Cement Industry: Final Report; EPA-457/R-00-002, September 2000. This document is an update to "Alternative Control Techniques Document—NO_x Emissions from Cement Manufacturing," EPA-453/R-94-004, March 1994.

Additional Reference Documents

1. 40 CFR 60 Subpart C, "Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators," Maximum Achievable Control Technology (MACT) determination for NOx," (62 FR 48379, September 15, 1997).
2. NESCAUM, Stationary Source Committee Recommendation on NO_x RACT for Utility Boilers, 8/12/1992.
3. NESCAUM, Stationary Source Committee Recommendation on NO_x RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines, 9/18/1992.
4. NESCAUM, Status Report on NO_x Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, December 2000.
5. "NO_x Policy Document for the Clean Air Act of 1990," EPA-452/R-96-005, March 1996.
6. Ozone Transport Commission. "Identification and Evaluation of Candidate Control Measures" Final Technical Support Document, prepared by MACTEC, February 28, 2007.
7. Sourcebook: NO_x Control Technology Data, USEPA, July 1991.
8. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA.
9. State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA, 10/27/1995.
10. Stationary Reciprocating Internal Combustion Engines – Updated Information on NO_x Emissions and Control Techniques – Revised Final Report, USEPA, 9/1/2000.
11. STAPPA/ALAPCO, Controlling Emissions of Nitrogen Oxides from Existing Utility Boilers Under Title I of the Clean Air Act: Options and Recommendations, 4/27/1992.
12. USEPA, Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995.
13. USEPA, Memorandum Subject: Fuel Switching to Meet the Reasonably Available Control Technology (RACT) Requirements for Nitrogen Oxides (NOx), Michael H. Shapiro, EPA Office of Air and Radiation, 7/30/1993.
14. USEPA, Memorandum Subject: Nitrogen Oxides (NOx) Questions from Ohio EPA, Tom Helms, Chief Ozone/Carbon Monoxide Programs Branch, (no date cited, references 11/30/1993 questions).
15. USEPA, NO_x Emissions from Stationary Internal Combustion Engines, October 2003.
16. USEPA, Summary of NO_x Control Technologies and their Availability and Extent of Application, February 1992.
17. USEPA, Summary of State/Local NO_x Regulations for Stationary Sources, 2004.

5.0 APPENDICES

Appendix A: RACT/BACT Clearinghouse Data Sheets

EPA INFORMATION ON INDUSTRIAL/COMMERCIAL/INSTITUTIONAL BOILERS & PROCESS HEATERS 100-250 MMBtu/hr

Regulation Details

ID/Regulation Name & Industry Sector: RUS-0248 INDUS./COMMER./INSTIT. BOILERS & PROCESS HEATERS

SIC: SEE NOTE
Basis: MACT
State: US
U.S. EPA Region: 0
Regulation Status: IN EFFECT
Entry Date: 02/18/2003
Last Update Date: 06/27/2005
Agency: OT002 EPA REGION I
Agency Contact: 1 Phone: (919) 541-0800

CFR Citation/Regulation No.: 40 CFR PART 63 SUBPART DDDDD

BID Ref.:
BID Title:
NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS, SUMMARY OF PUBLIC COMMENTS AND RESPONSES

On-Line Location of Regulation:

Regulation Effective Date Regulation Effective Legal Ref.

Tech Support Doc. Date: / /
Economic Analysis Date: / /
Risk Analysis Date: / /
Public Notice Date: / /

Regulation Propose Date: 01/13/2003 68 FR 1660
Promulgation Date: 09/13/2004 69 FR 55218
Regulation Effective Date:

RACT EPA INFORMATION FOR RECIPROCATING INTERNAL COMBUSTION ENGINES

Regulation Details

ID/Regulation Name & Industry Sector: RUS-0241 RECIPROCATING INTERNAL COMBUSTION ENGINES

SIC: 4911
Basis: MACT
State: US
U.S. EPA Region: 0
Regulation Status: IN EFFECT
Entry Date: 12/20/2002
Last Update Date: 06/23/2005
Agency: OT002 EPA REGION I
Agency Contact: 1 Phone: (919) 541-0800

CFR Citation/Regulation No.: 40 CFR PART 63 SUBPART ZZZZ

BID Ref.:
BID Title:
NATIONAL EMISSION STANDARDS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES, SUMMARY OF PUBLIC COMMENTS AND RESPONSES

On-Line Location of Regulation:

Regulation Effective Date
Regulation Effective Legal Ref.

Tech Support Doc. Date: / /
Regulation Propose Date: 12/19/2002 67 FR 77830
Economic Analysis Date: 11/01/02
Promulgation Date: 06/15/2004 69 FR 33474
Risk Analysis Date: / /
Regulation Effective Date:
Public Notice Date: / /
Hearing? No

RACT EPA INFORMATION ON LARGE MUNICIPAL WASTE COMBUSTORS

Process Details

Regulation Name/Industry Sector: LARGE MUNICIPAL WASTE COMBUSTORS (MWC)
RBLC ID: RUS-0189
Process Name/Description: MWC, MASS BURN WATERWALL AND REFRACTORY, EXISTING

Throughput / Throughput Unit:	**250 T/D (SEE PROCESS NOTE)**
Process Type Codes:	**21.400,21.900,21.999**

Pollutant List		
Pollutant	Primary Emission Limit	Basis
NOx	**205 PPMV @ 7% OXYGEN**	**FIPMACT**

Process Notes:	**THE FED. PLAN APPLIES TO EXISTING MWC UNIT W/CAPACITIES TO COMBUSTS > 250T/D OF MSW UNLESS THE UNIT IS SUBJECT TO A SECTION 111(D)/129 STATE PLAN THAT AHS BEEN APPROVED BY EPA AND IS CURRENTLY EFFECTIVE. MASS BURN WATERW. IS A FIELD-ERECTED UNIT COMBUSTS MSW IN A WATERWALL FURN. MASS BURN REFRAC. IS A FIELD-EREC. UNIT COMB. MSW IN A REFRAC. WALL F.**

RACT EPA INFORMATION ON GAS FIRED 10-100 MMBtu/hr BOILERS

Regulation Details

ID/Regulation Name & Industry Sector: RUS-0070 SMALL INDUS-COMMER-INSTITU STEAM GEN UNITS

SIC: 3569
State: US
Regulation Status: IN EFFECT
Entry Date: 06/22/1994
Agency: OT002 EPA REGION I
Agency Contact: 1 Phone: (919) 541-0800

Basis: NSPS
U.S. EPA Region: 0

Last Update Date: 06/14/2006

CFR Citation/Regulation No.: 40 CFR PART 60 SUBPART DC

BID Ref.:
BID Title:
On-Line Location of Regulation:
Regulation Effective Date

Regulation Effective Legal Ref.

Tech Support Doc. Date: / /
Economic Analysis Date: / /
Risk Analysis Date: / /
Public Notice Date: / /
Hearing? Yes

Regulation Propose Date: 06/09/1989
Promulgation Date: 09/12/1990 55 FR 37683
Regulation Effective Date:

40 CFR Part 60 Subpart Dc - Small Industrial-Commercial Institutional Steam Generating Units between 10 and 100 MMBtu/hr for which construction is commenced after 6/9/89. Amended 5/8/1996 (61 FR 20736) to exempt boilers during periods of combustion research. Amended 2/12/1999 (64 FR 7465) to reduce reporting/recordkeeping burden.

RACT EPA INFORMATION ON BOILERS GREATER THAN 250 MMBtu/hr

Regulation Details

ID/Regulation Name & Industry Sector: RUS-0251 COAL- OR OIL-FIRED ELEC. UTILITY STEAM GEN. UNITS

SIC: 4911 Basis: NESHAP
State: US U.S. EPA Region: 0
Regulation Status: PROPOSED
Entry Date: 03/03/2004 Last Update Date: 01/11/2005
Agency: OT002 EPA REGION I
Agency Contact: 1 Phone: (919) 541-0800

CFR Citation/Regulation No.: 40 CFR PART 63 SUBPART UUUUU

BID Ref.:
BID Title:
NO BID IS SPECIFIED.

On-Line Location of Regulation:

Regulation Effective Date Regulation Effective Legal Ref.

Tech Support Doc. Date: 02/27/2004
Economic Analysis Date: 01/28/2004
Risk Analysis Date: / /
Public Notice Date: 02/02/2004
Hearing? Yes

Regulation Propose Date: 01/30/2004 69 FR 4665
Promulgation Date:
Regulation Effective Date:

RACT EPA INFORMATION ON LARGE HOSPITAL MEDICAL WASTE INCINERATORS

Process Details

Regulation Name/Industry Sector: HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATORS
RBLC ID: RUS-0190
Process Name/Description: HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINE., LARGE

		Pollutant List		
Throughput / Throughput Unit:	500 LB/H (SEE PROC NOTE)	**Pollutant**	**Primary Emission Limit**	**Basis**
Process Type Codes:	21.300	NO_X	250 PPMV @ 7% OXYGEN	FIPMACT

Process Notes:	HMIWI W/MAX DESIGN WASTE BURNING CAPACITY >50 LB/H; OR CONTINUOUS OR INTERMITTENT HMIWI W/MAX CHARGE RATE >500 LB/H; OR BATCH HMIWI W/MAX CHARGE RATE >4,000 LB/D ARE SUBJECTED TO THIS SUBPART. GOOD COMBUSTION PRACTICE (GCP) IS REQUIRED.

Appendix B: Major Sources of NOx in Maryland and Applicable RACT Regulations

Premises ID	Agency Interest	Facility type	Example Applicable NOx RACT	NOx (tpy)
001-0011	Luke Paper Company	Fine paper & kraft pulp mill w/ fuel burning (gas/oil/coal) equipment	COMAR 26.11.14.07 & 26.11.40	2,695.78
001-0203	AES Warrior Run Inc	Electric cogeneration plant-fuel burning equipment	COMAR 26.11.09.08	552.18
003-0208	Baltimore Washington International Thurgood Marshall Airport	International airport	NOX SM 25 tpy	12.67
003-0247	Northrop Grumman Systems Corp	Electronic systems manufacturing plant	NOX SM 25 tpy	21.46
003-0310	Naval Support Activity Annapolis	U.s. naval academy	COMAR 26.11.09.08	11.79
003-0316	US Coast Guard Yard (USCG Yard	Ship fabricating, repair & assembling facility	COMAR 26.11.09.08	9.93
003-0317	National Security Agency	Metal reclamation furnaces & fuel burning (oil-fired) equipment	COMAR 26.11.09.08	34.13
003-0322	Fort George G. Meade, Dept. of the Army	Federal military facility w/ boilers-generators-other equip	COMAR 26.11.09.08	12.07
003-0468	Fort Smallwood Road Complex	Electric generating station-fuel burning (oil/coal) equipment	COMAR 26.11.09.08	3,638.12
003-1471	Millersville Landfill Gas to Electric Project	Landfill gas-to-energy	NOX SM 25 tpy	17.96
005-0002	University Of Maryland - Baltimore County	Fuel burning (oil-fired) equipment	COMAR 26.11.09.08	13.39
005-0039	Greater Baltimore Medical Center	Medical center	NOX SM 25 tpy	10.16
005-0076	Constellation Power - Notch Cliff	Electric generating station-fuel burning (nat. Gas) equipment	COMAR 26.11.09.08	31.17
005-0078	Constellation Power - Riverside Generating Station	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	49.27
005-0079	C P Crane Generating Station	Electric generating station-fuel burning (oil/coal) equipment	COMAR 26.11.09.08 & 26.11.38-EPA SIP approved version	1,247.37
005-0812	Back River WWTP	Municipal wastewater treatment plant	NOX SM 25 tpy	25.12
005-2322	Ecca Calcium Products - Imerys	Calcium carbonate manufacturing facility	NOX SM 25 tpy	16.10

005-2581	Eastern Landfill Gas, LLC	Landfill	NOX SM 25 tpy	7.43
005-2589	Fritz Enterprises, Inc.	Scrap metal sales - hammermill, conveyour/feeders and slag plant	NOX SM 25 tpy	14.40
009-0012	Calvert Cliffs Nuclear Power Plant, LLC	Electric generating station-oil fired equipment	COMAR 26.11.09.08	14.04
009-0021	Dominion Cove Point LNG, LP	Liquefied natural gas facility	COMAR 26.11.09.08	36.37
013-0110	Maryland Paving - Finksburg	Asphalt paving contractor	NOX SM 25 tpy	9.10
013-0012	Lehigh Cement Company LLC	Portland cement manufacturing	COMAR 26.11.30.01, .02, .03, .07, and .08	2,901.83
013-0394	Harvest RGI, LLC	Concrete and asphalt pavement recycler	NOX SM 25 tpy	82.02
015-0202	Rock Springs Generation Facility	Natural gas fired electric generating station	COMAR 26.11.09.08	51.77
017-0014	NRG Morgantown Generating Station	Electric generating station-fuel burning (oil/coal) equipment	COMAR 26.11.09.08 & 26.11.38-EPA SIP approved version	1,322.98
017-0040	Naval Support Facility Indian Head	Fuel burning (no.6 oil/coal) equipment/420 gallon mixer facility	COMAR 26.11.09.08	91.75
017-0150	Aggregate Industries - Waldorf	Asphalt plant	NOX SM 25 tpy	12.48
019-0013	Vienna Power Station	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	52.77
019-0029	Valley Protein	Poultry rendering plant	NOX SM 100 tpy	16.46
021-0027	Redland Brick, Inc. - Rocky Ridge	Molded brick manufacturer	NOX SM 25 tpy	5.39
021-0131	Fort Detrick	Medical waste combustor	COMAR 26.11.08.08-2	0.401
021-0131	Fort Detrick	Municipal waste combustor	COMAR 26.11.08.07	2.66
021-0444	Frederick National Laboratory for Cancer Research	Medical laboratory	NOX SM 25 tpy	8.69
021-0599	Fannie Mae UTC Data Center	Ten diesel generator sets (9-0192 thru 9-0201)	COMAR 26.11.09.08	1.10
021-0623	NIBC Fort Detrick	U.s. military base	NOX SM 25 tpy	4.61
023-0042	Mettiki Coal, LLC	Thermal coal dryer	COMAR 26.11.09.08	125.01
023-0081	Texas Eastern Transmission-3223	Natural gas pipeline compression station	COMAR 26.11.29 (excluding 26.11.29.04B(1)(b)	63.81
025-0005	J. M. Huber Corporation - Havre De Grace-2233	Inorganic pigment production plant	COMAR 26.11.09.08	13.12
025-0024	Constellation Power - Perryman Generating Station-3946	Electric generating station-fuel burning (nat. Gas/oil) equipment	COMAR 26.11.09.08	214.65
025-0081	APG-Aberdeen Area-26474	Military facility with fuel burning & misc equipment	COMAR 26.11.09.08	35.11
025-0082	APG-Edgewood Area-20603	Military facility with fuel burning & misc equipment	NOX SM 25 tpy	23.43
025-0434	Upper Chesapeake Medical Center-26625	Fuel-burning (nat. Gas/no. 2 oil) equipment	COMAR 26.11.09.08	7.51

027-0052	MD & VA Milk Producers Coop-112589	Milk spray drying process	COMAR 26.11.09.08	4.79
027-0223	Transcontinental Gas Pipe Line - Ellicott City-5546	Interstate natural gas transmission facility	COMAR 26.11.29 (excluding 26.11.29.04B(1)(b)	11.28
027-0535	Allan Myers Materials-Jessup Asphalt-26922	Hot mix asphalt crushing and screening plant	NOX SM 25 tpy	6.08
027-0612	Laurel Sand & Gravel, Inc.-84093	Asphalt contracting batch plant	NOX SM 25 tpy	3.38
029-0001	Eastman Specialties Corporation-2107	Polymeric plasticizers manufacturing plant	NOX SM 100 tpy	16.45
031-0019	NRG Dickerson Generating Station-46	Electric generating station-fuel burning (oil/coal) equipment	COMAR 26.11.09.08 & 26.11.38-EPA SIP approved version	1,688.18
031-0323	National Institute of Standards and Technology-13355	Federal facility with fuel burning equipment	COMAR 26.11.09.08	29.98
031-0324	National Institutes of Health	Biomedical Research – Fuel Burning Equipment	COMAR 26.11.19.08	79.17
031-0325	NIH Animal Center	Veterinary medicine research	NOX SM 25 tpy	11.79
031-1129	GSA Federal Research Center at White Oak	Government services	NOX SM 25 tpy	6.32
031-1505	Verizon Maryland Inc., Chesapeake Complex	Emergency power/peaking station	COMAR 26.11.09.08	1.44
031-1718	Montgomery Co. Resource Recovery Facility (MCRRF)	Municipal waste combustor / resource recovery facility (2-0132)	COMAR 26.11.08.08	441.17
031-1723	Oaks Landfill (Gas to Energy)	Landfill gas-to-energy	NOX SM 25 tpy	17.68
031-1875	IBM Corporation	Emergency diesel generators	COMAR 26.11.09.08	2.61
031-1951	Washington Gas - Rockville Station	Natural gas & propane peaking station & storage facility	COMAR 26.11.09.08	7.49
033-0002	Aggregate Industries - Kirby Road Asphalt Plant	Hot mix asphalt production facility	NOX SM 25 tpy	7.00
033-0010	University Of Maryland	Cogeneration central steam plant	COMAR 26.11.09.08	115.37
033-0011	Laurel Sand and Gravel, Inc	Hot mix asphalt production facility	NOX SM 25 tpy	7.73
033-0014	NRG Chalk Point Generating Station	Electric generating station-fuel burning (gas/oil/coal) equipment	COMAR 26.11.09.08 & 26.11.38-EPA SIP approved version	3,877.30
033-0655	Andrews Air Force Base	Boilers / diesel generators / paint booth / fuel storage & dispensing	COMAR 26.11.09.08	10.45
033-0675	NASA Goddard Space Flight Center	Laboratory research facility w/fuel burning & process equipment	COMAR 26.11.09.08	17.46
033-0883	U.S. Army - Adelphi Laboratory Center	U.S. Army Research Laboratory	COMAR 26.11.09.08	16.37
033-1522	Prince George's County Correctional Facility	Fuel burning	COMAR 26.11.09.08	21.30
033-2200	KMC Thermo-Brandywine Power Facility	Electric generating station - combined cycle facility	COMAR 26.11.09.08	117.96

033-2568	Gaylord Entertainment Company	National resort and convention center	NOX SM 25 tpy	16.67
033-2658	Aggregate Industries - Bladensburg Asphalt Division	Hot mix asphalt production facility	NOX SM 25 tpy	5.65
037-0017	Naval Air Station Patuxent River	Military facility with operations for naval aircrafts	COMAR 26.11.09.08	23.68
039-0017	Crisfield Energy Center	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	38.28
039-0055	Eastern Correctional Institution	Co-generation plant, woodchip-fired boilers, wwtp	COMAR 26.11.09.08	36.10
039-0062	A & N Electric Cooperative	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	3.36
041-0029	Easton Utilities - N. Washington Street	Electric generating station-fuel burning (nat. Gas/oil) equipment	COMAR 26.11.09.08	95.96
041-0069	Easton Utilities - Airport Park	Electric generating station-fuel burning (nat. Gas/oil) equipment	COMAR 26.11.09.08	100.21
043-0006	Mack Trucks, Inc	Truck engine & transmission manufacturing facility	COMAR 26.11.09.08	45.62
043-0008	Holcim (US), Inc	Portland cement manufacturing	COMAR 26.11.30.01, .02, .03, .07, and .08	1,173.03
043-0127	Maryland Correctional Institution - Hagerstown	Fuel burning (nat. Gas/oil-fired) equipment	COMAR 26.11.09.08	17.58
045-0042	Perdue AgriBusiness	Vegetable oil refining	COMAR 26.11.09.08	48.21
045-0287	Ingenco Wicomico Plant	Landfill gas-to-energy	NOX SM 100 tpy	40.39
047-0044	Berlin Town Power Plant	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	1.77
510-0001	Johns Hopkins Hospital	Fuel burning (gas/oil) equipment	COMAR 26.11.09.08	78.43
510-0006	Constellation Power - Westport	Electric generating station-fuel burning (nat. Gas) equipment	COMAR 26.11.09.08	10.99
510-0007	Constellation Power - Gould Street Station	Electric generating station-fuel burning (nat. Gas) equipment	NOX SM 25 tpy	17.30
510-0076	W. R. Grace & Co. - Grace Davison - Curtis Bay	Silica, alumina based inorganic chemicals manufacturing	COMAR 26.11.09.08	74.45
510-0077	Johns Hopkins University - Charles Street	Fuel burning equipment	COMAR 26.11.09.08	34.21
510-0088	University of MD Medical Center Midtown Campus	Fuel Burning Equipment	NOX SM 25 tpy	7.69
510-0121	RELP Holabird, LLC	Soap and detergent production plant	COMAR 26.11.09.08	1.47
005-0167	Bluegrass Materials Company, LLC - Marriottsville Quarry	Limestone crushing and screening plant	NOX SM 25tpy	17.27
510-0233	National Gypsum Company	Gypsum board manufacturer		21.51

510-0265	Constellation Energy Group - Philadelphia Road	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	66.34
005-0282	Social Security Administration	Fuel burning equipment	COMAR 26.11.09.08	11.30
510-0314	American Sugar Refining, Inc.	Fuel burning oil	COMAR 26.11.09.08	49.57
510-0651	Veolia Energy Baltimore Heating, LLP-Central Ave	Steam generating	COMAR 26.11.09.08	51.50
510-0660	Veolia Energy Baltimore Heating, LLP-Cherry Hill	Fuel burning (natural gas fired) equipment	COMAR 26.11.09.08	1.09
510-1045	Morgan State University	Fuel burning (oil-fired)	COMAR 26.11.09.08	3.62
510-1158	Johns Hopkins Bayview Medical Center	Fuel burning (oil-fired)	COMAR 26.11.09.08	12.25
510-1665	Philadelphia Quartz Corp	Sodium silicate glass manufacturing plant	COMAR 26.11..09.08	75.64
510-1886	Wheelabrator Baltimore, LP	Municipal waste combuster (rated at 15oo tpd)	COMAR 26.11.08.08	1,141.25
510-2796	Veolia Energy Baltimore Heating, LLP-Spring Gardens Plant	Fuel burning (oil-fired) equipment	COMAR 26.11.09.08	78.72
510-2975	Curtis Bay Energy, LP	Medical waste (regional) combustor	COMAR 26.11.08.08-2	39.60
510-3078	Veolia Energy Baltimore Heating, LLP-Saratoga Plant	Fuel-burning (oil/nat. Gas) equipment (5-1260,1261,1262,1263 & 1264)	COMAR 26.11.09.08	12.42
510-3237	Trigen Energy - Inner Harbor East	Fuel burning (natural gas) equipment	COMAR 26.11.09.08	1.42
510-3406	NIH Bayview Aquisition, LLC	Medical laboratory, offices, library	NOX SM 25 tpy	11.39

Appendix C: COMAR 26.11.38 (EPA Approved Version)

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

Chapter 38 Control of NO_x Emissions from Coal-Fired Electric Generating Units

Authority: Environment Article, §§1-404, 2-103, and 2-301—2-303, Annotated Code of Maryland

.01 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) "Affected electric generating unit" means any one of the following coal-fired electric generating units:

(a) Brandon Shores Units 1 and 2;

(b) C.P. Crane Units 1 and 2;

(c) Chalk Point Units 1 and 2;

(d) Dickerson Units 1, 2, and 3;

(e) H.A. Wagner Units 2 and 3;

(f) Morgantown Units 1 and 2; and

(g) Warrior Run.

(2) "Operating day" means a 24-hour period beginning midnight of one day and ending the following midnight, or an alternative 24-hour period approved by the Department, during which time an installation is operating, consuming fuel, or causing emissions.

(3) "Ozone season" means the period beginning May 1 of any given year and ending September 30 of the same year.

(4) System.

(a) "System" means all affected electric generating units within the State of Maryland subject to this chapter that are owned, operated, or controlled by the same person and are located:

(i) In the same ozone nonattainment area as specified in 40 CFR Part 81; or

(ii) Outside any designated ozone nonattainment area as specified in 40 CFR Part 81.

(b) "System" includes at least two affected electric generating units.

(5) "System operating day" means any day in which an electric generating unit in a system operates.

(6) "30-day systemwide rolling average emission rate" means a value in lbs/MMBtu calculated by:

(a) Summing the total pounds of pollutant emitted from the system during the current system operating day and the previous 29 system operating days;

(b) Summing the total heat input to the system in MM Btu during the current system operating day and the previous 29 system operating days; and COMAR Final text Effective 8/31/15

(c) Dividing the total number of pounds of pollutant emitted during the 30 system operating days by the total heat input during the 30 system operating days.

(7) "24-hour block average emission rate" means a value in lbs/MMBtu calculated by:

(a) Summing the total pounds of pollutant emitted from the unit during 24 hours between midnight of one day and ending the following midnight;

(b) Summing the total heat input to the unit in MMBtu during 24 hours between midnight of one day and ending the following midnight; and

(c) Dividing the total number of pounds of pollutant emitted during 24 hours between midnight of one day and ending the following midnight by the total heat input during 24 hours between midn ight of one day and ending the following midnight.

.02 Applicability.

The provisions of this chapter apply to an affected electric generating unit as that term is defined in Regulation .01B of this chapter.

.03 2015 NO_x Emission Control Requirements.

A. Daily NOx Reduction Requirements During the Ozone Season.

(1) Not later than 45 days after the effective date of this regulation, the owner or operator of an affected electric generating unit (the unit) shall submit a plan to the Department and EPA for approval that demonstrateshow each affected electric generating unit will operate installed pollution control technology and combustion controls to meet the requirements of §A(2) of this regulation. The plan shall summarize the data that will be collected to demonstrate compliance with §A(2) of this regulation. The plan shall cover all modes of operation, including but not limited to normal operations, start-up, shut-down, and low load operations.

(2) Beginning on May 1, 2015, for each operating day during the ozone season, the owner or operator of an affected electric generating unit shall minimize NOxemissions by operat ing and optimizing the use of all installed pollution control technology and combustion contro ls consistent with the technological limitations, manufacturers'specifications, good engineerin,g and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation while burning any coal.

B. Ozone Season NO_x Reduction Requirements.

(1) Except as provided in §8(3) of th is regulation, the owner or operator of an affected electric generating unit shall not exceed a NOx 30-day systemwide rolling average emission rate of 0.15 lbs/MMBtu during the ozone season.

(2) The owner or operator of an affected electric generating unit subject to the provisions of this regulation shall cont inue to meet the ozone season NOx reduction requirements in COMAR 26.11.27.

(3) Ownership of Single Electric Generating Facility.

(a) An affected electric generating unit is not subject to §8(1) of this regulation if the unit is located at an electric generating facility that is the only facility in Maryland directly or indirectly owned, operated, or controlled by the owner, operator, or controller of the facility.

(b) For the purposes of this subsection, the owner includes parent companies, affiliates, and subsidiaries of the owner.

C. Annual NO_X Reduction Requirements. The owner or operator of an affected electric generating unit subject to the provisions of this regulation shall continue to meet the annual NOx reduct ion requirements in COMAR 26.11.27.

D. NO_X Emission Requirements for Affected Electric Generating Units Equipped with Fluidized Bed Combustors. COMAR Final text Effective 8/31/15

(1) The owner or operator of an affected electric generating unit equipped with a fluidized bed combustor is not subject to the requirements of §§A, 8(1) and (2), and C of this regulation.

(2) The owner or operator of an affected electric generating unit equipped with a fluidized bed combustor shall not exceed a NOx24-hour block average emission rate of 0.10 lbs/MMBtu.

.04 Compliance Demonstration Requirements.

A. Procedures for Demonstrating Compliance with Regulation .03A of this Chapter.

(1) An affected electric generating unit shall demonstrate, to the Department's satisfaction, compliance with Regulation .03A(2) of this chapter, using the information collected and maintained in accordance with Regulation .03A(1) of this chapter and any additional documentation available to and maintained by the affected electric generating unit.

(2) An affected electric generating unit shall not be required to submit a unit-specific report consistent with §A(3) of this regulation when the unit emits at levels that are at or below the following rates:

Affected Unit	24-Hour Block Average NO_x Emissions in lbs/MMBtu
Brandon Shores	
Unit 1	0.08
Unit 2 <650 MWg ≥650 MWg	 0.07 0.15
C.P. Crane	
Unit 1	0.30
Unit 2	0.28
Chalk Point	
Unit 1 only	0.07
Unit 2 only	0.33
Units 1 and 2 combined	0.20

Dickerson	
Unit 1 only	0.24
Unit 2 only	0.24
Unit 3 only	0.24
Two or more units combined	0.24
H.A. Wagner	
Unit 2	0.34
Unit 3	0.07
Morgantown	
Unit 1	0.07
Unit 2	0.07

(3) The owner or operator of an affected electric generating unit subject to Regulation .03A(2) of this chapter shall submit a unit-specific report for each day the unit exceeds its NO_x emission rate under §A(2) of this regulation, which shall include the following information for the entire operating day:

(a) Hours of operation for the unit;

(b) Hourly averages of operating temperature of installed pollution control technology;

(c) Hourly averages of heat input (MMBtu/hr);

(d) Hourly averages of output (MWh);

(e) Hourly averages of ammonia or urea flow rates;

(f) Hourly averages of NO_x emissions data (lbs/MMBtu and tons);

(g) Malfunction data;

(h) The technical and operational reason the rate was exceeded, such as:

(i) Operator error;

(ii) Technical events beyond the control of the owner or operator (e.g. acts of God, malfunctions); or

(iii) Dispatch requirements that mandate unplanned operation (e.g. start-ups and shut-downs, idling, and operation at low voltage or low load);

(i) A written narrative describing any actions taken to reduce emission rates; and

(j) Other information that the Department determines is necessary to evaluate the data or to ensure that compliance is achieved.

(4) An exceedance of the emissions rate under §A(2) of this regulation as a result of factors including but not limited to start-up, shut-down, days when the unit was directed by the electric grid operator to operate

at low load or to operate pursuant to any emergency generation operations required by the electric grid operator, including necessary testing for such emergency operations, or which otherwise occurred during operations which are deemed consistent with the unit's technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions, shall not be considered a violation of Regulation .03A(2) of this chapter provided that the provisions of the approved plan as required in Regulation .03A(1) of this chapter are met.

B. Procedures for Demonstrating Compliance with NO_x Emission Rates under this Chapter.

(1) Compliance with the NO_x emission rate limitations in Regulations .03B(1) and D(2) and .04A(2) of this chapter shall be demonstrated with a continuous emission monitoring system that is installed, operated, and certified in accordance with 40 CFR Part 75.

(2) For Regulations .03B(1) of this chapter, in order to calculate the 30-day systemwide rolling average emission rates, if 29 system operating days are not available from the current ozone season, system operating days from the previous ozone season shall be used.

.05 Reporting Requirements.

A. Reporting Schedule.

(1) Beginning 30 days after the first month of the ozone season following the effective date of this chapter, each affected electric generating unit subject to the requirements of this chapter shall submit a monthly report to the Department detailing the status of compliance with this chapter during the ozone season.

(2) Each subsequent monthly report shall be submitted to the Department not later than 30 days following the end of the calendar month during the ozone season.

B. Monthly Reports During Ozone Season. Monthly reports during the ozone season shall include:

(1) Daily pass or fail of the NO_x emission rates under Regulation .04A(2) of this chapter;

(2) The reporting information as required under Regulation .04A(3) of this chapter;

(3) The 30-day systemwide rolling average emission rate for each affected electric generating unit to demonstrate compliance with Regulation .03B(1) of this chapter;

Appendix D: COMAR 26.11.08.08-2 HMIWI REGULATION

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

Chapter 08 Control of Incinerators

Authority: Environment Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 2-406, 10-102, and 10-103, Annotated Code of Maryland

.01 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) Bag Leak Detection System.

(a) “Bag leak detection system” means an instrument that is capable of monitoring PM loadings in the exhaust of a fabric filter in order to detect bag failures.

(b) “Bag leak detection system” includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light-transmittance, or other effects to monitor relative PM loadings.

(1-1) "Batch HMIWI" means an HMIWI that is designed so that neither waste charging nor ash removal can occur during combustion.

[redacted]

(5) "Bypass stack" means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

[redacted]

(7-1) “Commercial HMIWI” means a HMIWI which offers incineration services for hospital/medical/infectious waste generated off site by firms unrelated to the firm that owns the HMIWI.

(8) "Continuous emission monitoring (CEMS)" means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

[redacted]

(16) "High-air phase" means the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures.

(17) "Hospital" is defined at 40 CFR §60.51c.

(18) "Hospital, medical and infectious waste incinerator (HMIWI)" means a special medical waste incinerator that combusts any amount of hospital, medical, and infectious waste.

(19) Hospital waste.

(a) "Hospital waste" means discards generated at a hospital, except unused items returned to the manufacturer.

(b) "Hospital waste" does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

(20) Incinerator.

(a) "Incinerator" means a furnace or combustion unit that uses controlled flame combustion for the thermal destruction of municipal solid waste, [redacted]

(b) "Incinerator" does not mean a hazardous waste incinerator.

(c) “Incinerator” does not mean any unit owned or operated by a government agency to destroy illegal or prohibited goods. The exclusion does not apply to items either confiscated or incinerated by private, industrial, or commercial entities.

(21) "Incinerator operator" means:

(a) For a municipal waste combustor (MWC), the facility manager (chief facility operator), shift foreman (supervisor), and incinerator control room personnel;

(b) For any other incinerator, the person who controls the waste feed and performs the necessary equipment adjustments to ensure efficient performance.

[redacted]

(24) "Intermittent HMIWI" means an HMIWI that is designed to allow waste charging, but not ash removal, during combustion.

(25) Large HMIWI.

(a) "Large HMIWI" means:

(i) an HMIWI that has a maximum design waste burning capacity of more than 500 pounds per hour;

(ii) A continuous or intermittent HMIWI that has a maximum charge rate of more than 500 pounds per hour; or

(iii) A batch HMIWI that has a maximum charge rate of more than 4,000 pounds per day.

(b) "Large HMIWI" does not mean:

(i) A continuous or intermitent HMIWI that has a maximum charge rate of less than or equal to 500 pounds per hour; or

(ii) A batch HMIWI that has a maximum charge rate of less than or equal to 4,000 pounds per day.

[redacted]

(29) "Maximum charge rate" means:

(a) For a continuous and intermittent HMIWI, 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits; or

(b) For a batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(30) "Maximum design waste burning capacity" means:

(a) For an intermittent and continuous HMIWI, the waste burning capacity as determined by the following formula:

C = PV × 15,000/8,500 where:

(i) C = HMIWI capacity, pounds/hour

(ii) PV = primary chamber volume, cubic feet

(iii) 15,000 = primary chamber heat release rate factor, Btu/cubic foot/hour

(iv) 8,500 = standard waste heating value, Btu/pound;

(b) For a batch HMIWI, the waste burning capacity as determined by the following formula: C = PV × 4.5/8 where:

(i) C = HMIWI capacity, pounds/hour

(ii) PV = primary chamber volume, cubic feet

(iii) 4.5 = waste density, pounds/cubic foot

(iv) 8 = typical hours of operation of a batch HMIWI, hours.

[redacted]

(33) "Medical, infectious waste" is defined at 40 CFR Part 60.51c, Subpart Ec.

(34) Medium HMIWI.

(a) "Medium HMIWI" means:

(i) An HMIWI that has a maximum design waste burning capacity of more than 200 pounds per hour, but less than or equal to 500 pounds per hour;

(ii) A continuous or intermittent HMIWI that has a maximum charge rate more than 200 pounds per hour, but less than or equal to 500 pounds per hour; or

(iii) A batch HMIWI that has a maximum charge rate more than 1,600 pounds per day, but less than or equal to 4,000 pounds per day.

(b) "Medium HMIWI" does not mean:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour or more than 500 pounds per hour; or

(ii) A batch HMIWI that has a maximum charge rate more than 4,000 pounds per day or less than or equal to 1,600 pounds per day.

[redacted]

(43) "Modification or modified HMIWI" is defined at 40 CFR §60.51c.

[redacted]

[redacted]

(46) "Operating day" means a 24-hour period between 12 midnight and the following midnight during which any amount of hospital waste or medical/infectious waste is combusted at any time in the HMIWI.

(47) "Operation" means the period during which waste is combusted in the incinerator excluding periods of startup or shutdown.

[redacted]

(50) "Primary chamber" means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.

[redacted]

(52) "Secondary chamber" means a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed.

[redacted]

(54) Shutdown.

(a) "Shutdown" means the period of time after all waste has been combusted in the primary chamber.

(b) "Shutdown" for a continuous HMIWI commences not less than 2 hours after the last charge to the incinerator.

(c) "Shutdown" for an intermittent HMIWI commences not less than 4 hours after the last charge to the incinerator.

(d) "Shutdown" for a batch HMIWI commences not less than 5 hours after the high-air phase of combustion has been completed.

(55) Small HMIWI.

(a) "Small HMIWI" means:

(i) An HMIWI that has a maximum design waste burning capacity less than or equal to 200 pounds per hour;

(ii) A continuous or intermittent HMIWI that has a maximum charge rate less than or equal to 200 pounds per hour; or

(iii) A batch HMIWI that has a maximum charge rate less than or equal to 1,600 pounds per day.

(b) "Small HMIWI" does not mean:

(i) A continuous or intermittent HMIWI that has a maximum charge rate more than 200 pounds per hour; or

(ii) A batch HMIWI that has a maximum charge rate more than 1,600 pounds per day.

(56) "Small rural area HMIWI" means a small HMIWI that is located more than 50 miles from the boundary of the nearest standard metropolitan statistical area and which burns less than 2,000 pounds per week of hospital, medical, and infectious waste (excluding those wastes burned during performance tests).

(57) Special medical waste.

(a) "Special medical waste" means:

(i) Any combination of organic and inorganic liquid or solid waste as defined in COMAR 26.13.11; or

(ii) Hospital general waste, when burned in conjunction with special medical waste generated at that hospital.

(b) "Special medical waste" includes hospital, medical, and infectious waste.

[redacted]

(59) "Standard metropolitan statistical area (SMSA)" means any area listed in OMB Bulletin No. 93-17 entitled "Revised Statistical Definitions for Metropolitan Areas" dated June 30, 1993.

(60) Startup.

(a) "Startup" means the period of time between the activation of the system and the first charge to the unit.

(b) "Startup" for a batch HMIWI means the period of time between activation of the system and ignition of the waste.

[redacted]

.02 Applicability.

A. Any source which is subject to the provisions of this chapter is also subject to the provisions of any other chapter. However, when this chapter establishes an emission standard for a specific installation which differs from the general emission standards in COMAR 26.11.06.01—.09, this chapter takes precedence.

[redacted]

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.03 Prohibition of Certain Incinerators in Areas III and IV.

[redacted]

.04 Visible Emissions.

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.05 Particulate Matter.

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.06 Prohibition of Unapproved Hazardous Waste Incinerators.

[redacted]

.07 Requirements for Municipal Waste Combustors with a Capacity of 35 tons or greater per day and less than or equal to 250 Tons Per Day.

[redacted]

.08 Requirements for an Existing Large MWC with a Capacity Greater Than 250 Tons Per Day.

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.08-1 Emission Standards and Requirements for HMIWIs.

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.08-2 Emission Standards and Requirements for HMIWIs Under 40 CFR 60 Subpart Ce as Revised October 6, 2009.

A. Applicability and Emission Standards. [redacted], the emission standards and requirements of §B(1)—(7) and §C(1)—(6) of this regulation apply to a person who owns or operates an HMIWI subject to 40 CFR Part 60, Subpart Ce, as revised, October 6, 2009.

B. Emission Limits and Requirements for Small, Medium, and Large HMIWIs.

(1) A person who owns or operates a small, medium, or large HMIWI for which construction was commenced on or before June 20, 1996 or for which modification commenced on or before March 16, 1998 shall comply with the following emission limits.

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits			Test Method	Averaging Time[1]
		Small	Medium	Large		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits			Test Method	Averaging Time[1]
		Small	Medium	Large		
						[redacted]
Nitrogen oxides	Parts per million by volume	190	190	140	EPA Reference Method 7 or 7E of Appendix A-4 of 40 CFR Part 60	3 run average (1 hr minimum sample time per run)
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

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Pollutant	Units (7 percent oxygen, dry basis)	Emission limits HMIWI size			Test Method	Averaging Time[1]
		Small	Medium	Large		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits HMIWI size			Test Method	Averaging Time[1]
		Small	Medium	Large		
[redacted]	[redacted]	[redacted]			[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

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(4) Compliance and Performance Testing.

(a) A person who owns or operates an HMIWI subject to §B of this regulation shall complete the initial and subsequent tests which meet the conditions and requirements using test methods and procedures listed under 40 CFR §§60.56c(b)(1) to (b)(6) and (b)(9) to (b)(14), [redacted]

(b) In addition to the specified test method, compliance with the emissions limits in §B may be demonstrated by use of CEMS or any approved alternative non-EPA test methods allowed under 40 CFR §60.56c(b).

(5) Monitoring Requirements. A person who owns or operates an HMIWI subject to §B of this regulation shall comply with the monitoring requirements under 40 CFR §60.57c.

(a) Exemptions. A person may elect to use the exemptions listed under 40 CFR §§60.56c(c)(5)(ii) through (v), (c)(6), (c)(7), (e)(6) through (10), (f)(7) through (10), (g)(6) through (10), and (h) for HMIWI units subject to .08-2B(1).

[redacted]

(6) Reporting and Record-Keeping Requirements. A person who owns or operates an HMIWI subject to §B of this regulation shall report to the Department and EPA and maintain records in accordance with the requirements listed in 40 CFR Part 60.58c(b)through (g), excluding 40 CFR §§60.58c(b)(2)(viii) and (b)(2)(xvii),(b)(2)(xviii) and (b)(2)(xix).

[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emission limits	Test Method	Averaging Time[1]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emission limits	Test Method	Averaging Time[1]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

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Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emission limits	Test Method	Averaging Time[1]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emission limits	Test Method	Averaging Time[1]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

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E. Compliance Schedules.

(1) A person who owns or operates a HMIWI subject to this regulation shall:

(a) Comply with all the requirements of §E of this regulation and related 40 CFR Part 62, Subpart V revision requirements by June 15, 2012 or as expeditiously as practicable; or

(b) Submit to the Department and the EPA for approval, a compliance plan by December 15, 2011 that includes the following increments of progress:

(i) Award contracts for control systems or process modifications or orders for purchase of components no later than June 15, 2012;

(ii) Initiate on-site construction or installation of the air pollution control device(s) or process changes no later than December 15, 2012;

(iii) Complete on-site construction or installation of control equipment or process changes by no later than December 15, 2013;

(iv) Comply with the requirements of this regulation and related 40 CFR Part 62, Subpart V revision as expeditiously as practicable, but no later than October 6, 2014; and

(v) Complete the compliance testing within 180 days after the final compliance date.

(2) A person who anticipates an inability to comply with the interim compliance dates described in §E(1)(b)(i)—(iii) of this regulation may submit to the Department and the EPA an alternative compliance plan designed to achieve compliance with §E(1)(b)(iv)—(v) of this regulation, and shall be bound by such plan upon the Department's and the EPA's approval.

F. Compliance Based on Previous Test Results. A person who owns or operates an HMIWI [redacted] subject to this regulation may use previous emissions tests to demonstrate compliance with the requirements of this regulation provided:

(1) The test was conducted using the applicable procedures and test methods listed in 40 CFR §60.56c(b) or EPA-accepted voluntary consensus standards;

(2) The HMIWI is to be operated in a manner (e.g., with charge rate, secondary chamber temperature, etc.) that would be expected to result in the same or lower emissions than observed during the previous emissions test(s);

(3) The HMIWI has not been modified such that emissions would be expected to exceed (notwithstanding normal test-to-test variability) the results from previous emissions test(s); and

(4) The previous emissions test(s) were conducted in 1996 or later.

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Appendix E: COMAR 26.11.08.08 MWC REGULATION

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

Chapter 08 Control of Incinerators

Authority: Environment Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 2-406, 10-102, and 10-103, Annotated Code of Maryland

.01 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

[redacted]

(8) "Continuous emission monitoring (CEMS)" means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

[redacted]

(12) "Existing municipal waste combustor (existing MWC)" means a municipal waste combustor for which the Department issued a permit to construct or for which construction began on or before September 20, 1994.

[redacted]

(20) Incinerator.

(a) "Incinerator" means a furnace or combustion unit that uses controlled flame combustion for the thermal destruction of municipal solid waste. [redacted]

(b) "Incinerator" does not mean a hazardous waste incinerator.

(c) “Incinerator” does not mean any unit owned or operated by a government agency to destroy illegal or prohibited goods. The exclusion does not apply to items either confiscated or incinerated by private, industrial, or commercial entities.

(21) "Incinerator operator" means:

(a) For a municipal waste combustor (MWC), the facility manager (chief facility operator), shift foreman (supervisor), and incinerator control room personnel;

[redacted]

(28) "Malfunction" is defined at 40 CFR §60.51c.

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(44) Municipal Solid Waste.

(a) "Municipal solid waste (MSW)" means municipal-type solid waste as defined in 40 CFR Part 60, Subpart Eb (Standards of Performance for Municipal Waste Combustors) as amended, which is incorporated by reference.

(b) "Municipal solid waste" does not include special medical waste.

(45) "Municipal waste combustor (MWC)" means an incinerator that burns only municipal solid waste.

[redacted]

(54) Shutdown.

(a) "Shutdown" means the period of time after all waste has been combusted in the primary chamber.

[redacted]

[redacted]

(60) Startup.

(a) "Startup" means the period of time between the activation of the system and the first charge to the unit.

[redacted]

.02 Applicability.

A. Any source which is subject to the provisions of this chapter is also subject to the provisions of any other chapter. However, when this chapter establishes an emission standard for a specific installation which differs from the general emission standards in COMAR 26.11.06.01—.09, this chapter takes precedence.

B. Regulation .07 of this chapter applies to an MWC that was constructed on or before August 30, 1999 and has a capacity of at least 35 tons and less than or equal to 250 tons per day.

C. Regulation .08 of this chapter applies to an existing MWC with a capacity greater than 250 tons per day as determined in accordance with 40 CFR §60.58b(j).

D. An MWC with a capacity greater than 250 tons per day for which construction began after December 20, 1989, and on or before September 20, 1994, and modification or reconstruction began after December 20, 1989,

and on or before June 19, 1996, is also subject to the requirements of 40 CFR Part 60, Subpart Ea, Standards of Performance for Municipal Waste Combustors, as amended, incorporated by reference at COMAR 26.11.06.12.

E. An MWC with a capacity greater than 250 tons per day for which construction began after September 20, 1994, or modification or reconstruction began after June 19, 1996, is also subject to the requirements of 40 CFR Part 60 Subpart Eb, Standards of Performance for Municipal Waste Combustors, as amended, incorporated by reference at COMAR 26.11.06.12.

F. A person who owns an existing MWC with a total capacity greater than 250 tons per day which was not in operation on or after December 19, 1995, may not operate the MWC unless the applicable requirements of this chapter are met.

[redacted]

.03 Prohibition of Certain Incinerators in Areas III and IV.

[redacted]

.04 Visible Emissions.

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.05 Particulate Matter.

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.06 Prohibition of Unapproved Hazardous Waste Incinerators.

[redacted]

.07 Requirements for Municipal Waste Combustors with a Capacity of 35 tons or greater per day and less than or equal to 250 Tons Per Day.

A person may not operate a municipal waste combustor that has a burning capacity of 35 tons or more per day and less than or equal to 250 tons per day that was constructed on or before August 30, 1999 which results in violation of the provisions of 40 CFR 62 Subpart JJJ.

.08 Requirements for an Existing Large MWC with a Capacity Greater Than 250 Tons Per Day.

A. Emission Standards and General Requirements.

(1) A person who owns or operates an existing large MWC subject to this regulation may not violate any of the emission standards or general requirements in §A(2) of this.

(2) Emission Standards and General Requirements.

Pollutant or Parameter	*Emission Standards for a Large MWC*	*Performance and Compliance Test Requirements*
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
NO_x (Oxides of Nitrogen)*	205 ppmv 24-hr arithmetic average. Mass burn refractory MWC is exempt.	CEMS (only for sources to which an emission standard applies). Applicable test procedures and methods as provided in 40 CFR §60.58b(h).
[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

* Corrected to 7 percent oxygen on dry basis. If a CO_2 monitor is selected as the dilutent monitor it must meet the requirements of 40CFR §60.58b(b)(6).

(3) The standards in §A(2) of this regulation apply at all times except during periods of startup, shutdown, or malfunction as provided in 40 CFR §60.58b(a).

B. Monitoring Requirements.

(1) A person who owns or operates an existing MWC subject to this regulation shall:

(a) Install, calibrate, operate, and maintain continuous monitors for [redacted] oxides of nitrogen, [redacted]

(b) Locate monitors downstream of the final air pollution control device to measure concentrations of oxygen, oxides of nitrogen, [redacted] of the exhaust gases;

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(3) The monitors required by §B(1)(a) and (b) of this regulation shall meet the installation, certification, reporting, record-keeping, and other requirements of COMAR 26.11.01.10, and 26.11.01.11, performance specifications in 40 CFR Part 60, Appendix B, the quality assurance procedures in 40 CFR Part 60, Appendix F, all requirements in 40 CFR §60.58b, COMAR 26.11.31.

(4) A person shall apply for and receive written approval from the Department before installing any of the monitors required in this chapter.

C. Reporting and Record-Keeping Requirements.

(1) A person who owns an existing MWC subject to this regulation shall report and maintain records in accordance with 40 CFR §60.59b of Subpart Eb, as applicable, except for the siting requirements under §60.59b(a), (b)(5), and (d)(11) of 40 CFR Part 60, Subpart Eb;

(2) Continuous monitoring data reduction and data availability shall be as prescribed in COMAR 26.11.01.10 and 26.11.01.11. If there is any inconsistency between COMAR 26.11.01.10 and 26.11.01.11 and 40 CFR 60, the requirements of 40 CFR 60 govern.

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.08-1 Emission Standards and Requirements for HMIWIs.

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.08-2 Emission Standards and Requirements for HMIWIs Under 40 CFR 60 Subpart Ce as Revised October 6, 2009.

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