

MARYLAND REGISTER

Proposed Action on Regulations

Comparison to Federal Standards Submission and Response

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In accordance with Executive Order 01.01.1996.03 and memo dated July 26, 1996, the attached document is submitted to the Department of Business and Economic Development for review.

The Proposed Action is not more restrictive or stringent than corresponding federal standards.

COMAR Codification: 26.11.38.01 - .06

Corresponding Federal Standard:

The federal Clean Air Act, 42 U.S.C. § 7401 et seq. requires EPA to establish health-based national air quality standards to protect people with an "adequate margin of safety." States are responsible for developing enforceable state implementation plans to meet the standards. The federal Clean Air Act requires the Maryland Department of the Environment to revise its regulations requiring the implementation of reasonably available control technology ("RACT") for certain sources, including coal-fired electric generating units, per 42 U.S.C.

§7502(c) and §7511a(a)—(b). The federal Clean Air Act requires the Maryland Department of the Environment to reach attainment as expeditiously as practicable, but no later than 6 years from the date of designation, per §7511.

Discussion/Justification:

The Clean Air Act requires the State to enact regulations to achieve reductions necessary to obtain the National Ambient Air Quality Standards (NAAQS). The attainment plan for the 75 ppb ozone NAAQS is due in June 2015. The requirement for continuous operation of control equipment and the more stringent averaging standard will contribute to the reductions needed in the attainment plan.

Maryland continues to exceed the federal ozone standard despite the significant reductions resulting from implementation of the Healthy Air Act. To meet the State's need for deeper emission reductions, this proposed action contains requirements for additional NOx emission reductions from coal-fired electric generating units. Measures required by this regulation also satisfy the RACT requirement specific to the ozone nonattainment plan requirements.

TO BE COMPLETED BY DBED

- Agree

-Disagree

Comments:

I defer to MDE's assertion that these regulations do not exceed the federal standards as they are the appropriate subject matter experts.

Name: Sandy Popp

Date: 10/31/2014

-Submit to Governor's Office

Governor's Office Response

Comments:

Transmittal Sheet	Date Filed with AELR Committee	TO BE COMPLETED BY DSD
		Date Filed with Division of State Documents
		Document Number
		Date of Publication in MD Register
PROPOSED OR REPROPOSED		
Actions on Regulations		

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

26.11.38 Control of NOx Emissions from Coal-Fired Electric Generating Units

Authority: Environmental Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 2-1003, 10-102, 10-103, and 10-1002, Annotated Code of Maryland

Notice of Proposed Action

□

The Secretary of the Environment proposes to adopt Regulations .01 - .06 under a new Chapter — COMAR 26.11.38 — "Control of NOx Emissions from Coal-Fired Electric Generating Units."

1. Desired date of publication in Maryland
Register: 12/12/2014

2. COMAR Codification

Titl e	Subtit le	Chapt er	Regulati on
26	11	38	01 - .06

3. Name of Promulgating Authority

Department of the Environment

4. Name of Regulations Coordinator

Carolyn A Jones

Telephone Number

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Mailing Address

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Statement of Purpose

The purpose of this action is to establish new nitrogen oxides (NOx) emission standards and additional monitoring and reporting requirements for coal-fired electric generating units in Maryland. The new standards for coal-fired electric generating units in Maryland and resulting reductions in NOx emissions are needed to achieve attainment of the National Ambient Air Quality Standard (NAAQS) for ozone and will satisfy the requirements of § 182 of the federal Clean Air Act.

This action will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan.

Background

In 2012, portions of Maryland were designated as

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Baltimore	MD	21230

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5. Name of Person to Call About this Document	Telephone No.
Mr. Randy Mosier	410-537-4488

Email Address
Randy.Mosier@maryland.gov

6. Check applicable items:

- New Regulations
- Amendments to Existing Regulations
 - Date when existing text was downloaded from COMAR online: .
- Repeal of Existing Regulations
- Recodification
- Incorporation by Reference of Documents Requiring DSD Approval
- Reproposal of Substantively Different Text:

: Md.
 R

(vol.) (issue) (page nos) (date)

Under Maryland Register docket no.: --P.

7. Is there emergency text which is identical to this proposal:

Yes No

8. Incorporation by Reference

Check if applicable: Incorporation by Reference (IBR) approval form(s) attached and 18 copies of documents

nonattainment for the 75 parts per billion (ppb) ozone NAAQS. Ozone is produced when volatile organic compounds (VOCs) and nitrogen oxides (NOx) react in the presence of heat and sunlight. The Department has found through a research partnership with the University of Maryland that NOx reductions are more effective at reducing ozone levels than VOC reductions.

Under the federal Clean Air Act, 42 U.S.C. § 7401 et seq., sources in ozone nonattainment areas classified as moderate and above are subject to a NOx Reasonably Available Control Technology (RACT) requirement.

Section 182 of the Clean Air Act requires the Maryland Department of the Environment (MDE) to review and revise NOx RACT requirements in the Maryland State Implementation Plan (SIP) as necessary to achieve compliance with new more stringent ambient air quality standards. EPA defines RACT as the lowest emissions limitation (e.g., on a part per million or pound per million Btu basis) that a particular source is capable of meeting by the application of control technology (e.g., installation and operation of low-NOx burners) that is reasonably available considering technological and economic feasibility. In reviewing existing NOx RACT requirements for adequacy, the Department considers technological advances, the stringency of the revised ozone standard and whether new sources subject to RACT requirements are present in the nonattainment area. Maryland's RACT SIP for the new 75 ppb ozone standard must examine existing controls on major sources of NOx to determine whether additional controls are economical and technically feasible.

In 2015, MDE is also required to submit an ozone attainment SIP that includes emission reduction strategies designed to achieve compliance with the 75 ppb ozone standard by 2018. Reductions in NOx emissions from coal-fired electric generating units on high electricity demand days during the ozone season are necessary to achieve compliance

proposed for incorporation submitted to DSD. (Submit 18 paper copies of IBR document to DSD and one copy to AELR.)

9. Public Body - Open Meeting

OPTIONAL - If promulgating authority is a public body, check to include a sentence in the Notice of Proposed Action that proposed action was considered at an open meeting held pursuant to State Government Article, §10-506(c), Annotated Code of Maryland.

OPTIONAL - If promulgating authority is a public body, check to include a paragraph that final action will be considered at an open meeting.

10. Children's Environmental Health and Protection

Check if the system should send a copy of the proposal to the Children's Environmental Health and Protection Advisory Council.

11. Certificate of Authorized Officer

I certify that the attached document is in compliance with the Administrative Procedure Act. I also certify that the attached text has been approved for legality by Mr. Michael Strande, Assistant Attorney General, (telephone #410-537-3421) on October 23, 2014. A written copy of the approval is on file at this agency.

Name of Authorized Officer

ROBERT M.
SUMMERS,
Ph.D

with the 75 ppb standard and will also be necessary to achieve compliance with the more stringent ozone standard EPA is expected to propose in December 2014. The measures required by this proposed action to reduce NOx emissions will address peak day NOx emissions as well as satisfy the requirement to update the NOx RACT standard.

To comply with the Maryland Healthy Air Act (or HAA), all active coal-fired electric generating units installed NOx reduction technologies that utilize chemical reductants to lower NOx emissions. These technologies included selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR), and selective alternative catalytic reduction (SACR). Implementation of the Healthy Air Act resulted in significant reductions in NOx emissions through the establishment of separate annual and ozone season mass emission limitations or caps on the affected coal-fired units. The HAA allows system-wide averaging to demonstrate compliance with the emission limits, i.e., compliance is demonstrated so long as total NOx emissions from all units in a system do not exceed the aggregate tonnage limit for all units in the "system" -- defined as all units under the same ownership. At this time, there are two "systems" in Maryland: (1) the Raven Power Finance LLC (Raven Power) System comprised of Brandon Shores Units 1 and 2, H. A. Wagner Units 2 and 3, and C. P. Crane Units 1 and 2; and (2) the NRG Energy, Inc. (NRG) system comprised of Morgantown Units 1 and 2, Chalk Point Units 1 and 2, and Dickerson Units 1, 2 and 3.

Previously owners of the plants now owned by Raven Power and NRG installed SCR, SNCR or SACR on units subject to the Healthy Air Act. The ability to average emissions across a system provided flexibility to install the most advanced controls (SCR) at some units, and controls with lower NOx emission removal efficiency (SACR and SNCR) at the remaining units. "Baseload" units were equipped with SCR while "load

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October 27, 2014

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following” units were predominantly equipped with SNCR or SACR. Overall, the operation of the combination of controls yielded a 75% reduction in NOx emissions from 2002 levels. The mass emission caps driving this reduction were established based on historic comparatively high utilization rates for the units.

In recent years the utilization of coal plants has changed dramatically on a national level, as well as in Maryland. The sharp decline in natural gas prices, rising cost of coal, and reduced demand for electricity are all contributing to a substantial reduction in the utilization of coal-fired plants. With increasing frequency, these older, less efficient plants operate primarily during periods of peak demand. This reduction in operation results in lower system-wide annual and ozone season NOx emissions, thereby allowing the units to operate at higher emission rates, while remaining below the HAA emission caps.

The Department found, through its recent review of 2007 through 2013 emissions data from Maryland coal-fired units equipped with SCRs, SNCRs and SACRs many of the coal-fired units were not consistently operating their previously installed controls to optimize emission reductions -- particularly during ozone season periods of high electricity demand when ozone levels are highest. In fact, during the most recent years, average ozone season NOx emission rates for certain units were increasing. This practice has resulted in high NOx emissions on days when emission reductions are most needed to avoid exceedances of the ozone standard.

This proposed regulation, when effective, will result in immediate reductions in ozone season NOx emissions from these sources, which are needed to achieve and maintain compliance with the 75 ppb ozone standard. In the longer term additional reductions will come primarily from seven units that are not equipped with SCR controls and are high NOx emitters when called upon to run — Chalk Point Unit 2; Wagner Unit

2; Crane Units 1 and 2; and Dickerson Units 1, 2, and 3.

Affected Sources

This action impacts coal-fired electric generating units (EGUs) in Maryland, which account for more than 50% of the State's power plant NOx emissions. Affected EGUs include: Brandon Shores (Units 1 and 2); C.P. Crane (Units 1 and 2), H.A. Wagner (Units 2 and 3) plants; Chalk Point (Units 1 and 2), Morgantown (Units 1 and 2), Dickerson (Units 1, 2 and 3); and AESWarrior Run.

Requirements

This action is part of a broader strategy to further reduce NOx emissions from coal-fired EGUs in the State by requiring owners and operators of affected EGUs to comply with the following measures:

- No later than 45 days after the effective date of this regulation, submit a plan to MDE, for approval by MDE and EPA, that demonstrates how the unit will operate installed pollution control technology and combustion controls to minimize emissions;
- Beginning May 1, 2015, and during the entire ozone season whenever the unit is combusting coal, operate and optimize the use of all installed pollution and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering, maintenance practices, and air pollution control practices to minimize emissions (as defined in 40 C.F.R. § 60.11(d));
- Demonstrate compliance by meeting a system-wide NOx emission rate of 0.15 lbs/MMBtu as a 30-day rolling average during the ozone season. A unit that 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 is exempt from the obligation to meet this NOx

emission rate;

- Continue to meet the ozone season and annual NO_x reduction requirements set forth in COMAR 26.11.27;

- Meet a NO_x emission rate of 0.10 lbs/MMBtu as a 24-hour block average on an annual basis if the unit is a fluidized bed combustor;

- No later than June 1, 2020, the owner or operator of C.P. Crane Units 1 and 2, Chalk Point Unit 2, Dickerson Units 1, 2, and 3 and H.A. Wagner Unit 2 must comply with one the following three options:

(i) install and operate a selective catalytic reduction (SCR) control system during the ozone season and meet a NO_x emission rate of 0.09 lbs/MMBtu, as determined on a 30-day rolling average during the ozone season; (ii) permanently retire the unit; or (iii) Switch the unit's fuel from coal to natural gas.

- Demonstrate compliance with the requirements and emission rates in the regulation in accordance with the prescribed procedures.

Projected Emissions Reductions

The Department projects that implementation of section .03 requirements will result in an estimated daily NO_x emission reduction of 25 percent and 9 tons from average levels of 36 tons/day during the period from 2011 through 2013 as long as the two current systems remain intact. Additional emission reductions should be realized on peak days as the NO_x emission rate restrictions will achieve better performance from units that traditionally are operated only upon high electricity demand days. A more accurate estimate of daily reductions can be made after compliance plans from the affected sources are approved by the Department. The estimated daily NO_x emission reduction due to implementation of section .04 in 2020 ranges from 30 to 36 percent below the aggregate potential to emit with a maximum reduction of 17 tons/day.

Comparison to Federal Standards

There is a corresponding federal standard to this proposed action, but the proposed action is not more restrictive or stringent.

Estimate of Economic Impact

I. Summary of Economic Impact.

As described above, the new regulation provides three options from which affected sources may choose to achieve compliance with the 2020 requirements. Affected sources have five years to analyze compliance options and projected changes in energy markets to select the most cost-effective compliance option. The flexible regulatory approach and five year lead time makes it difficult at this time to quantify future costs.

Implementation of these regulations will result in reduced ozone levels thereby reducing the adverse health impacts experienced by many Marylanders caused by exposure to high levels of ozone. These benefits include a lower incidence of hospitalizations, respiratory illnesses, and restricted activity days. Health benefits are influenced by many factors and monetizing benefits is difficult. Ozone season economic benefits from reduced incidents ranges from \$60,000 - \$300,000,000 (in 2010 dollars).

All of Maryland's coal-fired EGUs are currently equipped with either the most efficient or second most efficient available NO_x control technology, SCR and SNCR or SACR, respectively. Compliance with the 2015 requirements will require all coal-fired units to operate and optimize existing pollution and combustion controls to minimize NO_x emissions during the ozone season. The cost of optimizing operation of the existing control technologies (SCR and SNCR and SACR) annually for each affected unit individually is estimated to be in the range of \$430,000 to \$4.3 million for each affected unit.

As noted above, compliance with the 2020 requirements can be achieved through one of three options. Under the first option for 2020

compliance, units currently equipped with SNCR or SACR control technologies could remove and replace those technologies with the more advanced SCR technology. Installation of state-of-the-art SCR controls on a unit can cost up to \$200 million. The performance and removal efficiency of the controls at a specific unit can depend in part on how much the unit operates. We note that in 2012 Securities and Exchange Commission filings, the previous owners of the units now owned by NRG indicated their intent to install SCR technology at Chalk Point Unit 2 and Dickerson Units 1, 2 and 3.

Under the second compliance option, affected units could convert to cleaner burning natural gas. The installed cost of a natural gas combined cycle unit is approximately \$1 million per megawatt of capacity. The regulation provides a significant five year compliance lead time. This is particularly important for the natural gas option, as the utilization of natural gas is projected to significantly increase due to the dynamics of the energy market. The availability of natural gas, site specific constraints and market fuel prices will factor into decisions about selection of this option.

The third compliance option is retirement of the unit(s). Many of the units subject to this regulation were built in the 1950's and are much less efficient than modern units. Some of these units may simply be reaching the end of their ability to efficiently produce energy and the costs associated with fuel switching or installation and operation of advanced NOx controls would reduce the unit's profitability.

There will be no expected impact on the Department, other State agencies, or local governments as a result of this action.

	Revenue (R+/R-)	
II. Types of Economic Impact.	Expenditure (E+/E-)	Magnitude

A. On issuing agency:	(E+)	Minimal
B. On other State agencies:	NONE	Minimal
C. On local governments:	NONE	Minimal

Benefit (+)	Magnitude
Cost (-)	

D. On regulated industries or trade groups:		
Compliance Costs	(-)	\$430,000 - \$300 million
E. On other industries or trade groups:		
MD Contractors	(+)	Indeterminate
F. Direct and indirect effects on public:		
(1) Health Benefits	(+)	\$60,000 - \$300 million
(2) Electricity Rates	(-)	Indeterminate

III. Assumptions. (Identified by Impact Letter and Number from Section II.)

A. The Department maintains both a compliance and permitting program for major sources as required by the Clean Air Act. These programs will implement these regulations.

B. There are no anticipated tasks or compliance activities required of other state agencies due to these regulations.

C. There are no anticipated tasks or compliance activities required of local government due to these regulations.

D. It is difficult to determine the precise costs to regulated entities associated with implementation of this action because there can be a number of site-specific requirements and variables associated with the cost of installation and

operation of pollution control equipment or installation of new equipment at specific plants. Companies must optimize their existing control equipment to meet the 2015 requirements. The annual operating and maintenance cost for a single unit can range from \$430,000 to \$4.3 million. Optimization of the operation of the existing controls many push annual operating and maintenance costs toward the high end of the estimates or even add some additional costs but the exact additional cost if any cannot be determined at this time. Companies can choose from three options to meet 2020 requirements. Raven Power and NRG submitted cost analyses for the replacement of existing SNCR/SACR control technology with SCR control technology for certain units. Capital cost estimates for this change in technology on an individual unit range from \$40,000,000 to \$200,000,000. Operating and maintenance costs range from \$430,000 to \$4,300,000 (in 2014 dollars). Additionally, the regulations allow fuel switching to natural gas. Current publications and review of recently built facilities that have installed natural gas boilers indicates the cost of installation to be approximately \$1,000,000 per megawatt of capacity. Therefore an anticipated range of cost for installing a natural gas boiler is \$25,000,000 to \$300,000,000 (in 2014 dollars). In the case of a unit retirement, the company will lose revenue and may face decommissioning costs. Therefore the Department anticipates costs will range from \$430,000 to \$300 million for any of the options.

E. Installation of SCR technology or natural gas-fired boilers is usually performed by specially trained tradesmen. Maryland contractors and equipment manufacturers may see an increase in demand for services; however, the magnitude of the increase that may result is indeterminate.

F(1). Health benefits are influenced by many factors and monetizing benefits is difficult. Implementation of these regulations will result in a reduction of incidents in which Marylanders experience adverse health effects, including hospitalizations, illnesses, restricted activity days

and other effects caused by air pollution and exposure to ground level ozone. Ozone season economic benefits from reduced incidents ranges from \$60,000 - \$300,000,000 (in 2010 dollars).

F(2). Commercial and consumer electricity rates are influenced by many factors. The costs associated with implementation of this action may be one factor that influences these rates, but the magnitude of that influence is difficult to quantify when considered along with other factors that significantly affect electric rates.

Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

Comments may be sent to USE COMMENT STATEMENT, , , or call , or email to , or fax to . Comments will be accepted through . A public hearing will be held, The Department of the Environment will hold a public hearing on the proposed action on January 13, 2015 at 1 p.m. at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Conference Rooms, Baltimore, Maryland 21230-1720. Interested persons are invited to attend and express their views. Comments may be sent to Mr. Randy Mosier, Chief of the Regulation Division, Air and Radiation Management Administration, Department of the Environment, 1800 Washington Boulevard, Suite 730, Baltimore, Maryland 21230-1720, or email to randy.mosier@maryland.gov. Comments must be received no later than January 13, 2015, or be submitted at the hearing. For more information, call Randy Mosier at (410) 537-4488. Copies of the proposed action and supporting documents are available for review at the following locations:

- The Department of the Environment's website at: <http://www.mde.state.md.us/programs/regulations/air/Pages/reqcomments.aspx>
 - The Air and Radiation Management Administration; and
 - Regional offices of the Department in Cumberland and Salisbury.
- Anyone needing special accommodations at the public hearing should contact the Department's Fair Practices Office at (410) 537-3964. TTY users may contact the Department through the Maryland Relay Service at 1-800-735-2258.

Economic Impact Statement Part C

A. Fiscal Year in which regulations will become effective: FY 2015

B. Does the budget for the fiscal year in which regulations become effective contain funds to implement the regulations?

Yes

C. If 'yes', state whether general, special (exact name), or federal funds will be used:

A combination of Maryland Clean Air Funds (Special) and Air Pollution Control Program Grant Funds (Federal) will be used.

D. If 'no', identify the source(s) of funds necessary for implementation of these regulations:

E. If these regulations have no economic impact under Part A, indicate reason briefly:

F. If these regulations have minimal or no economic impact on small businesses under Part B, indicate the reason and attach small business worksheet.

Commercial and consumer electricity rates are influenced by many factors. The costs associated with the implementation of this action may be one factor that influences these rates, but the

magnitude of the influence is difficult to quantify when considered along with other factors that significantly affect electricity rates.

G. Small Business Worksheet:

Attached Document:

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

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

Authority: Environmental Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 2-1003, 10-102, 10-103, and 10-1002, Annotated Code of Maryland

ALL NEW MATTER

.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 81.

(b) A system must include 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 rolling average emission rate" means a value in lbs/MMBtu calculated by:

(a) Summing the total pounds of pollutant emitted from the unit during the current operating day and the previous twenty-nine operating days;

(b) Summing the total heat input to the unit in MMBtu during the current operating day and the previous twenty-nine operating days; and

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

(7) "30-day system-wide 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 twenty-nine system operating days;

(b) Summing the total heat input to the system in MMBtu during the current system operating day and the previous twenty-nine system operating days; and

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

(8) "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 midnight 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 §.01B of this chapter.

.03 2015 NO_x Emission Control Requirements.

A. Daily NO_x 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 shall 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 requirements of §A(2) of this regulation. The plan shall summarize the data that will be collected to demonstrate compliance with §A(2). The plan shall cover all modes of operation, including but not limited to normal operations, start-up, shut-down and low capacity 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 NO_x 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 C.F.R. § 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 §B(3), the owner or operator of an affected electric generating unit shall not exceed a NO_x 30-day system-wide 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 continue to meet the ozone season NO_x reduction requirements in COMAR 26.11.27.

(3) Ownership of Single Electric Generating Facility.

(a) An affected electric generating unit is not subject to B(1) 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 §.03B(3), 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 NO_x reduction requirements in COMAR 26.11.27.

D. NO_x Emission Requirements for Affected Electric Generating Units Equipped with Fluidized Bed Combustors.

(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, B(1), B(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 NO_x 24-hour block average emission rate of 0.10 lbs/MMBtu.

.04 Additional NO_x Emission Control Requirements Beginning June 1, 2020.

A. This regulation applies to C.P. Crane units 1 and 2, Chalk Point unit 2, Dickerson units 1, 2, and 3 and H.A. Wagner unit 2.

B. General Requirements. The owner or operator of the affected electric generating units subject to this regulation shall choose from the following:

(1) Not later than June 1, 2020:

(a) Install and operate a selective catalytic reduction (SCR) control system; and

(b) Meet a NO_x emission rate of 0.09 lbs/MMBtu, as determined on a 30-day rolling average during the ozone season;

(2) Not later than June 1, 2020, permanently retire the unit; or

(3) Not later than June 1, 2020, switch fuel from coal to natural gas for the unit.

.05 Compliance Demonstration Requirements.

A. Procedures for demonstrating compliance with §.03(A) of this chapter.

(1) An affected electric generating unit shall demonstrate, to the Department’s satisfaction, compliance with §.03(A)(2) of this chapter, using the information collected and maintained in accordance with §.03(A)(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 where the unit emits at levels that are at or below the following rates:

Affected Unit	24-Hour Block Average NOx 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 §.03(A)(2) of this chapter shall submit a unit-specific report for each day the unit exceeds its NOx emission rate of §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 NOx 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 capacity);
- (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 of §A(2) of this regulation including but not limited to start-up and shut-down, days when the unit was directed by the electric grid operator to operate at low capacity or to operate pursuant to any emergency generation operations required by the electric grid operator, including necessary testing for such emergency operations or to have 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 §.03A(2) of this chapter provided that the provisions of the approved plan as required in §.03A(1) are met.

B. Procedures for demonstrating compliance with NOx emission rates of this chapter.

(1) Compliance with the NOx emission rate limitations in §§.03B(1), .03D(2), .04B(1)(b) and .05A(2) shall be demonstrated with a continuous emission monitoring system that is installed, operated, and certified in accordance with 40 CFR Part 75.

(2) For §.03B(1), in order to calculate the 30-day system-wide rolling average emission rates, if twenty-nine system operating days are not available from the current ozone season, system operating days from the previous ozone season shall be used.

(3) For §.04B(1), in order to calculate the 30-day rolling average emission rates, if twenty-nine operating days are not available from the current ozone season, operating days from the previous ozone season shall be used.

.06 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 NOx emission rates of §.05A(2).

(2) The reporting information as required under §.05A(3).

(3) The 30-day system-wide rolling average emission rate for each affected electric generating unit to demonstrate compliance with §.03B(1).

(4) Beginning June 1, 2020, the daily 30-day rolling average heat input calculated in lbs/MMBtu to demonstrate compliance with the requirements of Regulation .04B(1)(b) of this chapter.

END NEW MATTER