

IN THE MATTER OF: * **BEFORE THE MARYLAND**
RAVEN POWER FORT * **DEPARTMENT OF**
SMALLWOOD, LLC * **THE ENVIRONMENT**
* * * * *

CONSENT AGREEMENT

This CONSENT AGREEMENT is issued pursuant to the authority vested in the Maryland Department of the Environment (Department) by Titles 1 and 2 of the Environment Article of the Maryland Code and by the Code of Maryland Regulations (COMAR) 26.11 to regulate air pollution in the State of Maryland and to enforce State air pollution control laws and regulations.

WHEREAS, Raven Power Fort Smallwood LLC (“Raven Power”) owns and/or operates the Brandon Shores and H.A. Wagner electric generating stations located in Anne Arundel County, Maryland;

WHEREAS, Units 1 and 2 at the Brandon Shores electric generating station and Units 1 through 4 at the H.A. Wagner electric generating station (collectively, “Affected Units”) are sources of nitrogen oxides (“NOx”) and are subject to the regulations promulgated by the Department and codified in COMAR 26.11.09.08;

WHEREAS, COMAR 26.11.09.08 establishes emissions standards and other requirements for certain NOx sources, including the Affected Units, and contains a provision that allows a person who owns or operates more than one installation subject to the source-specific regulations to demonstrate compliance through the use of an averaging plan;

WHEREAS, an averaging plan under COMAR 26.11.09.08B(4) must include a demonstration that on each day of operation the total system-wide NOx emissions are equal to or

less than the NO_x emissions that would have been discharged if each installation had met its applicable source-specific emissions standard established in COMAR 26.11.09.08;

WHEREAS, COMAR 26.11.09.08B(4)(c) requires that an averaging plan be approved by the Department and approved by the United States Environmental Protection Agency ("EPA") as a revision to Maryland's State Implementation Plan ("SIP") prior to its acceptance as a means of compliance;

WHEREAS, Raven Power has submitted, and the Department has approved, a proposed averaging plan (the "Averaging Plan"), which is attached as Exhibit A and incorporated by reference into this Consent Agreement;

WHEREAS, the Averaging Plan provides for aggregate, annual mass emissions from the Affected Units which will be at least 20% less than the mass emissions which would have been allowed from the Affected Units pursuant to the applicable source-specific requirements of COMAR 26.11.09.08; and

WHEREAS, the parties recognize that EPA's SIP revision process can be time-consuming and intend for this Consent Agreement to authorize the implementation of the Averaging Plan during the SIP revision process so that the greater air quality benefits of the Averaging Plan can be maximized.

AGREEMENT

NOW, THEREFORE, the Department and Raven Power hereby AGREE, and Raven Power hereby CONSENTS to the following terms and conditions:

1. The Department shall submit the Averaging Plan and this Consent Agreement to EPA for approval as a revision to the Maryland SIP.

2. Until such time as EPA either approves or disapproves the Averaging Plan, this Consent Agreement shall, pursuant to § 2-611 of the Environment Article, constitute a Plan for Compliance with the requirements of COMAR 26.11.09.08.

3. Raven Power will comply fully with the Averaging Plan approved by the Department and attached as Exhibit A. In the event Raven Power fails to comply with the Averaging Plan, or in the event that EPA disapproves the Averaging Plan as a revision to the Maryland SIP, the requirements of COMAR 26.11.09.08 shall apply to each of the Affected Units.

4. Raven Power will submit a copy of the quarterly report required by COMAR 26.11.09.08K to EPA Region III. All such reports shall be mailed to: Diana Esher, Director, Air Protection Division, U.S. EPA Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103-2029.

5. Raven Power shall submit a written report to the Department within ninety (90) days following the end of each calendar year demonstrating compliance with the Averaging Plan's requirement that aggregate annual mass emissions from the Affected Units be at least 20% less than the mass NO_x emissions which would have been allowed from the Affected Units pursuant to the applicable source-specific requirements of COMAR 26.11.09.08.

6. Raven Power shall maintain records and information at each of the Affected Units which are adequate to verify the calculations used to demonstrate compliance with the Averaging Plan's requirements, and Raven Power shall make those records and information available to the Department upon request.

7. The provisions of this Consent Agreement shall apply to and be binding on Raven Power and its successors and assigns, including all transferees of any legal or equitable interest

in the Affected Units. This Consent Agreement and the Averaging Plan may be transferred to one or more persons that hold any legal or equitable interest in the Affected Units as long as all of the Affected Units will continue to be owned, operated, or controlled by a single entity. At least 15 days prior to the transfer by Raven Power or any successors or assigns of any legal or equitable interest in the Affected Units, the transferor or transferors shall provide a copy of this Consent Agreement by means of certified mail to the prospective successors-in-interest. Any agreement for the transfer of any legal or equitable interest in any of the Affected Units shall provide that the transferee of such interest shall comply fully with the terms and conditions of this Consent Agreement, and that the terms of this Consent Agreement are applicable to the transferee. The transferor or transferors shall contemporaneously provide the Department with a copy of the portion(s) of the transfer agreement(s) evidencing compliance with the terms of this Paragraph. Upon any transfer by a transferor of its entire interest in the Affected Units in accordance with the terms of this Paragraph, this Consent Agreement shall bind the transferee, and the transferor shall be relieved of any further obligations under this Consent Agreement.

8. It is the intent of the parties that the provisions of this Consent Agreement be severable and that, should any of this Consent Agreement be declared by a court of law to be invalid or unenforceable, the remainder of the Consent Agreement shall remain in effect to the maximum reasonable extent. The parties agree that this Consent Agreement shall be governed by and construed in accordance with Maryland law.

9. The Department may seek any legal or equitable remedy available to it for violations of this Consent Agreement.

RAVEN POWER FORT
SMALLWOOD, LLC.

02/18/2016
Date

John Strauch
John Strauch
Authorized Person
Name and Title

MARYLAND DEPARTMENT
OF THE ENVIRONMENT

25 Feb 2016
Date

George S. Aburn, Jr.
George S. Aburn, Jr., Director
Air and Radiation Management Division

Approved for form and legal sufficiency
this 18th day of February, 2016

Michael F. Strande
Michael F. Strande
Assistant Attorney General



MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Larry Hogan
Governor

Ben Grumbles
Secretary

Boyd Rutherford
Lieutenant Governor

January 19, 2016

Mr. Thomas Weissinger
Director, Environmental
Raven Power
1005 Brandon Shores Rd.
Suite 100
Baltimore, MD 21226

RE: 2016 January Revision to the NOx RACT Averaging Plan

Dear Mr. Weissinger:

The Department approves the amended NOx RACT averaging plan submitted in January of 2016 (attached). The amended NOx RACT plan will be attached as Exhibit A and incorporated by reference into a new Consent Agreement. This Consent Agreement will become effective when signed by the Department.

The C.P. Crane, H.A. Wagner and Brandon Shores electric generating units are subject to regulations commonly referred to as "NOx RACT". Under COMAR 26.11.09.08 (B)(4), the named units may comply with NOx RACT emission limits by averaging. Raven Power currently follows an averaging plan that was submitted in October of 2012 by Constellation Power Source Generation, Inc. Due to the pending sale of the C. P. Crane electric generating units to Middle River Power, Raven Power has requested to amend the current averaging plan to allow the H.A. Wagner Units and Brandon Shores Units to continue with emissions averaging post sale.

The new Consent Agreement will require an additional 15% reduction of allowable NOx emissions from the Raven Power system compared to the 2012 agreement.

If you have any questions, please contact me at (410) 537-3967.

Sincerely,

Susan Nash
Air Quality Compliance Program
Air and Radiation Management Administration



Revised NOx RACT Averaging Plan

Re-submitted by,

Raven Power Fort Smallwood LLC
January 2016

Introduction

The purpose of this document is to establish a new NOx Reasonably Available Control Technology (RACT) averaging plan for and among the following electric generating units: Brandon Shores Unit 1 & 2 and H.A. Wagner Units 1 through 4. COMAR 26.11.09.08 (Control Of NOx Emissions For Major Stationary Sources), B.(4) (Emissions Averaging.) describes the requirements for the use of an averaging plan as an alternate means of meeting NOx RACT standards on a system wide basis. EPA has allowed for averaging plants so that more stringent controls can be installed in exchange for lesser controls on others. Specifically the U.S. Environmental Protection Agency (EPA) has addressed NOx RACT averaging in the economic incentive plan (EIP) rule making saying that "an economic incentive plan may allow sources subject to the RACT requirement to attain RACT level emissions reductions in the aggregate".¹

Environmental Benefit

The proposed revised averaging plan will meet both the provisions of COMAR 26.11.09.08B(4) and provide an environmental benefit by insuring that on an annual basis the NOx mass emissions from the six affected units included in the averaging plan are at least 20% less than those allowed by the NOx RACT limits, if applied to the units individually.

Regulatory Background

COMAR 26.11.09.08 (Control Of NOx Emissions For Major Stationary Sources), Section B.(4) (Emissions Averaging.) establishes an alternative means for affected sources to achieve compliance with NOx RACT standards using a system wide Averaging Plan, the requirements of which are:

"B.(4)(a) Instead of meeting the source specific emission standards set forth in §5C – F of this regulation, a person who owns or operates more than one installation subject to this regulation may achieve compliance by meeting an overall source or system-wide NOx emission reduction that is equivalent to or greater than the NOx emission reduction that would be achieved if each Individual Installation complied with applicable requirements.

B.(4)(b) A person who proposes to comply with this regulation by averaging the emissions of two or more installations (separate stacks) shall submit a proposal to the Department for approval.

B.(4)(c) Any proposal for emissions averaging approved by the department is not an acceptable means of compliance until the proposal is also approved by the EPA as a revision to the State Implementation Plan (SIP).

B.(4)(d) A person who proposes to average emissions to comply with this regulation shall:

B.(4)(d)(i) Have the capability to continuously monitor NOx emissions for each installation to be included in the emissions averaging; and

B.(4)(d)(ii) Demonstrate to the Department that on each day of operation the total plant or system-wide NOx emissions are equal to or less than the NOx emissions that would be discharged if each installation met the applicable emission standard in this regulation."

Averaging Plan History

On April 16, 2001, Constellation Power Source Generation (CPSG) entered into a Consent Order with the Department that established an Averaging Plan involving ten CPSG units, Brandon Shores Unit 1 & 2, C.P. Crane Units 1 & 2, Gould Street Unit 3, H.A. Wagner Units 1 through 4, and Riverside Unit 4.

¹ Federal Register, February 23, 1993, pages 11110 and 11115

In October 2012, CPSP and the Maryland Department of the Environment agreed on a new Averaging Plan for the above-listed generating units which excluded Gould Street Unit 3, and Riverside Unit 4.

In December 2012, ownership of the Brandon Shores, H.A. Wagner, and C.P. Crane facilities was transferred to Brandon Shores LLC, H.A. Wagner LLC, and C.P. Crane LLC respectively, with Raven Power Fort Smallwood LLC as the operator (and Title V permittee) of the Brandon Shores and H.A. Wagner plants, located contiguously on the Fort Smallwood Road Complex.

In June 2015 these companies (and plants) became part of Talen Energy.

On or about February 1, 2016, C.P. Crane LLC, owner of the C.P. Crane facility, will be transferred to Middle River Power LLC, so those units will no longer be eligible for averaging with the Brandon Shores and H.A. Wagner units.

The Brandon Shores and H.A. Wagner units will continue to be operated as Raven Power Fort Smallwood LLC and will still be part of Talen Energy.

Raven proposes to continue using an averaging plan to show compliance with applicable NOx RACT requirements for the following units located at the Fort Smallwood Road Complex:

- Brandon Shores Unit 1
- Brandon Shores Unit 2
- H.A. Wagner Unit 1
- H.A. Wagner Unit 2
- H.A. Wagner Unit 3
- H.A. Wagner Unit 4

Table 1 provides a summary of the current NOx RACT averaging plan limits for these units.

Table 1 - Summary of NOx RACT Averaging Plan Limits (2012)		
Facility	Unit	RACT Limit, lb/MMBtu
Brandon Shores	1	0.5
	2	0.5
H.A. Wagner	1	0.3
	2	0.5
	3	0.5
	4	0.3

Individual unit compliance with NOx RACT requirements will be determined daily on a 30-day rolling average basis. Annual compliance will also be demonstrated by showing that annual mass emissions from the units in the averaging plan are less than 80% of the mass emissions that would have been allowed on an individual basis.

The following methodology will be used to calculate 30-day rolling emissions and determine compliance:

1. Calculate daily system and NOx RACT emission rates:

$$ER_{System} = \sum (ER_i * (HI_i / HI_{Total}))$$

$$ER_{RACT} = \sum (ER_{RACT,j} * (HI_j / HI_{Total}))$$

where:

$$ER_{System} = \text{System average emission rate, lb/MMBtu}$$

$$ER_{RACT} = \text{System average NOx RACT limit, lb/MMBtu}$$

$$ER_i = \text{Daily emission rate for unit i, lb/MMBtu}$$

$ER_{RACT,i}$ = Daily NOx RACT limit for unit i, lb/MMBtu
 H_i = Daily heat input for unit i, MMBtu
 H_{Total} = Daily heat for all of the units = $\sum H_i$, MMBtu

2. After 30 days, calculate 30-day rolling emission rate for the system and the NOx RACT:

$$ER_{30\text{ Day System}} = (\sum (ER_{System})) / 30$$

$$ER_{30\text{ Day RACT}} = (\sum (ER_{RACT})) / 30$$

where:

$ER_{30\text{ Day System}}$ = 30-day rolling system average emission rate, MMBtu/lb
 $ER_{30\text{ Day RACT}}$ = 30-day rolling system average emission rate, MMBtu/lb

3. Calculate mass emissions on a daily basis:

$$NOx_{30\text{ Day System}} = ER_{30\text{ Day System}} * H_{Total} / 2000$$

$$NOx_{RACT} = ER_{30\text{ Day RACT}} * H_{Total} / 2000$$

where:

$NOx_{30\text{ Day System}}$ = NOx mass emissions based on a 30-day rolling system average emission rate, tons
 NOx_{RACT} = NOx mass emissions based on a 30-day rolling RACT limit, tons

4. Determine compliance with NOx RACT:

$$NOx_{System} < NOx_{RACT}$$

Reporting

All the units included in the Averaging Plan have continuous emissions monitors (CEM) for monitoring NOx emissions. These units follow the operations, maintenance, recordkeeping, and reporting requirements contained in 40 CFR Part 75. Quarterly reports will be submitted within 30 days of the end of each reporting quarter summarizing compliance with the Averaging Plan.

In addition on a yearly basis Raven will certify that the NOx mass emissions from the six units included in the averaging plan did not exceed 80% of the emissions allowable under the NOx RACT limits.

$$NOx_{Annual System} < 0.80 * NOx_{RACT Total}$$

where:

$NOx_{Annual System}$ = Annual NOx mass emissions for the units in the averaging plan
 $NOx_{RACT Total}$ = Allowable NOx mass emissions based on the NOx RACT limits