UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

November 22, 2010

Karla McManus
Air Resources Division
New Hampshire Department of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

Dear Ms McManus:

On October 1, 2010, the New Hampshire Department of Environmental Services proposed Chapter Env-A 2300, Mitigation of Regional Haze, for public comment. This rule establishes emission standards for certain fossil-fuel-fired power plants that contribute to regional haze.

We have reviewed the proposed regulation and we believe there are a number of revisions that need to be made to Chapter Env-A 2300 in order for EPA to be able to approve this rule as BART (Best Available Retrofit Technology). You will find our comments on Chapter Env-A 2300 in the Enclosure. These comments only include concerns about Chapter Env-A 2300 and do not include comments on the revisions to New Hampshire's Regional Haze SIP that were recently proposed on November 19, 2010. EPA will fully review the materials proposed on November 19, 2010 and send you comments by December 20, 2010.

We would recommend that you not finalize Chapter Env-A 2300 before receiving our comments on the November 19 proposal as concerns raised on the BART supporting documentation in the November 19 proposal may necessitate further revisions to Chapter Env-A 2300.

If you have any questions on these comments, please contact Anne McWilliams of my staff at 617-918-1697.

Sincerely,

David B. Conroy, Chief
Air Programs Branch

Enclosure

cc: Bob Scott, NH DES
Jeff Underhill, NH DES

Enclosure
EPA Comments on New Hampshire's
Proposed Env-2300 Mitigation of Regional Haze

1) In Env-A 2301.01, New Hampshire states that the purpose of the rule is to ensure compliance with regional haze program requirements, "including but limited to the provisions for Best Available Control Technology (BART)." With its final submission of Env-2300 Mitigation of Regional Haze to its State Implementation Plan (SIP), NH DES must submit a five factor analysis supporting the proposed BART requirements. It appears that such an analysis is part of the revisions to the Regional Haze SIP proposed on November19, 2010. EPA will fully review this analysis and send comments in the future.

2) Env-A 2302.01(a)(1), 2302.01(a)(2), 2302.01(b)(1), 2302.02(b), and 2302.02(c) all contain a reference to "limitations specified in permit conditions established in accordance with Env-A 600." Similar references are also made in Env-A 2304.01(a) and Env-A 2304.02(a) pertaining to performance testing requirements. Since New Hampshire is relying on these conditions to implement the BART and long term strategy requirements of its Regional Haze SIP, these permit conditions must be submitted to EPA as part of the state's Regional Haze SIP. Currently, the Regional Haze SIP contains the following attachments for Merrimack Station and Newington Station:

ATTACHMENT EE – Temporary Permit for PSNH Merrimack Station
ATTACHMENT HH – Draft Title V Operating Permit for PSNH Merrimack Station
ATTACHMENT II – Title V Operating Permit for PSNH Newington Station

For Merrimack Station, it is not clear what is intended to be incorporated into the SIP as BART since the Temporary Permit for PSNH Merrimack Station has an expiration date of September 30, 2010 on it and the Title V Operating Permit is only in draft form.

For Newington Station, it is not clear what specific sections of the Title V Operating Permit are intended to be incorporated into the SIP as BART.

Moreover, EPA has not had adequate time to review the supporting BART materials that are part of the November 19, 2010 revisions to the Regional Haze SIP. EPA will fully review these materials and send comments in the future. EPA will look to see how the comments we submitted to NH DES on June 26, 2009 regarding BART for Merrimack Station and Newington were addressed.

3) In Env-A 2302.01(b)(2), New Hampshire is proposing a NOx emission limit of 0.37 lb per million BTUs on a calendar monthly average basis. Under the proposed regulation, this emission limitation would be applicable to the MK2 boiler at Public Service of New Hampshire's Merrimack Station.

EPA's Guidelines for BART Determinations Under the Regional Haze Rule (see 70 FR 39172; July 6, 2005) specifies that the averaging time for EGUs should be a 30-day rolling average, with a definition of "boiler operating day" that is consistent with the definition in the New Source Performance Standards (NSPS) for utility boilers in 40 CRF Part 60, subpart Da. Therefore, we would suggest the following language be added to the proposed regulation:

> **Emission Limits:** The term "30-day rolling average," as used in this regulation shall be determined by calculating an arithmetic average of all hourly rates for the current boiler operating day and the previous 29 boiler operating day. A new 30-day rolling average shall be calculated for each boiler operating day, which means any twenty-four hour period between midnight and the following midnight during which any fuel is combusted at any time at the steam generating unit. Each 30-day rolling average rate shall include start-up, shutdown, emergency and malfunction periods. The 30-day rolling average emission rate is calculated as follows:

- Calculate the hourly average emission rate for any hour in which any fuel is combusted in the boiler.

- Calculate the 30-day rolling average emission rate as the arithmetic average of all valid hourly average emission rates for the 30 successive boiler operating days.

In addition, we note that a NOx emission limit of 0.37 lb per million BTUs is not consistent with the MANE-VU recommended level of BART NOx control for non-CAIR EGUs, which is 0.1 – 0.25 lb per million BTUs. Moreover, NOx CEM data available from EPA's Clean Air Markets Division data base indicates that the NOx controls on PSNH's MK2 boiler are capable of meeting much lower NOx emission rates on a 30-day rolling average than proposed in Env-A 2302.01(b)(2). The attached three graphs show the daily NOx emissions rate and the corresponding rolling 30-day average NOx emission rate from MK2 during 2008 and 2009, as reported to EPA's EPA's Clean Air Markets Division data base. In 2009, at no point was a 30-day rolling average of 0.25 lbs per million BTU exceeded. A limitation of 0.37 lb per million BTUs is approximately 50% higher than the emission limitation achieved in practice by the SCR installed on MK2. It is also not consistent with Controlled Emissions from MK2 that were contained in the November 19, 2010 draft Attachment X to your Region Haze SIP, which was recently posted on your web site (see http://des.nh.gov/organization/divisions/air/do/asab/rhp/documents/x.pdf). On page 16 of this document, "Controlled Emissions" from MK2 with the existing SCR are stated to be 2,871 tons NOx/year. However, at a rate of 0.37 lb per million BTUs, "Controlled Emissions" would be significantly higher than this. During the 5-year period from 2002-2006, the average annual heat input from MK2 was 23,433,641 mmBTU. At a rate of 0.37 lbs.mmBTU, controlled emissions would exceed 4,300 tons NOx/year.

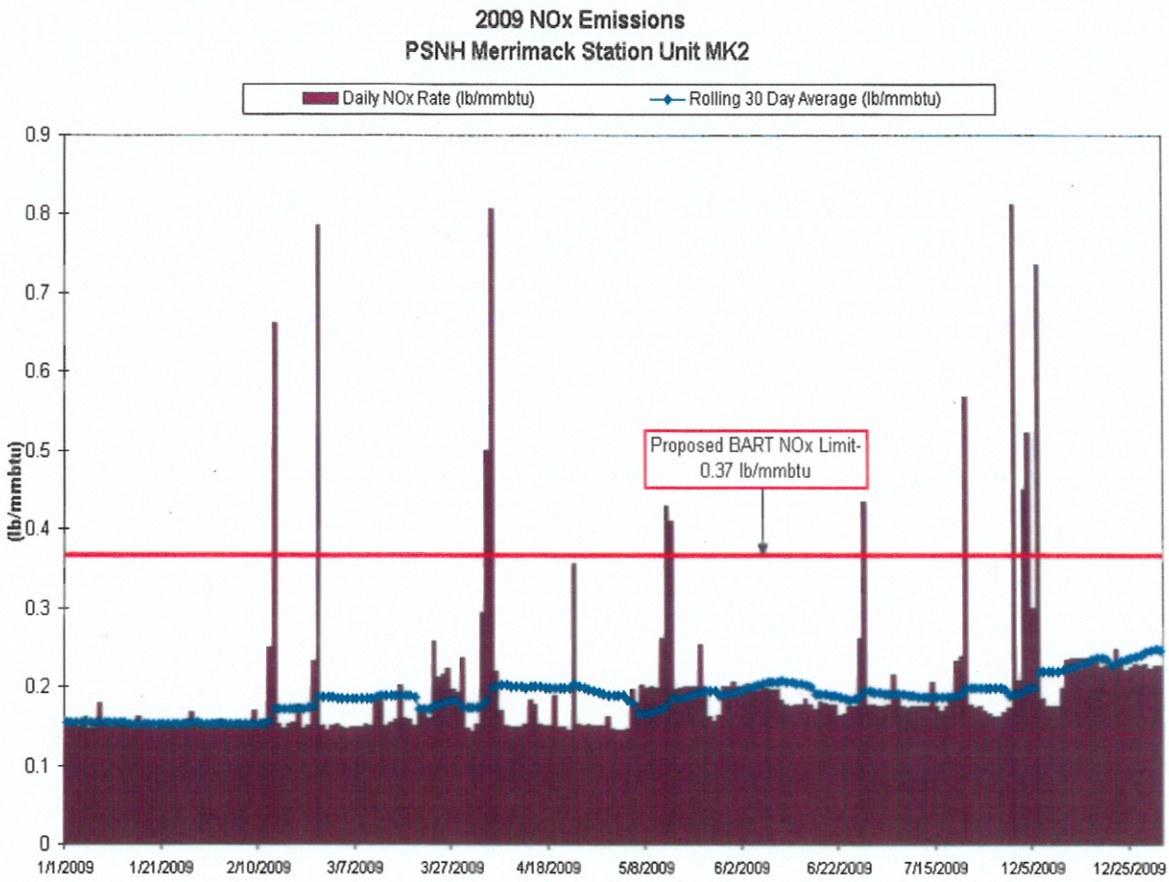
4) In Env-A 2302.01(b)(3), New Hampshire is proposing that TSP emissions shall not exceed 0.08 lb per million BTUs. Under the proposed regulation, this emission limitation would be applicable to the MK2 boiler at PSNH's Merrimack Station.

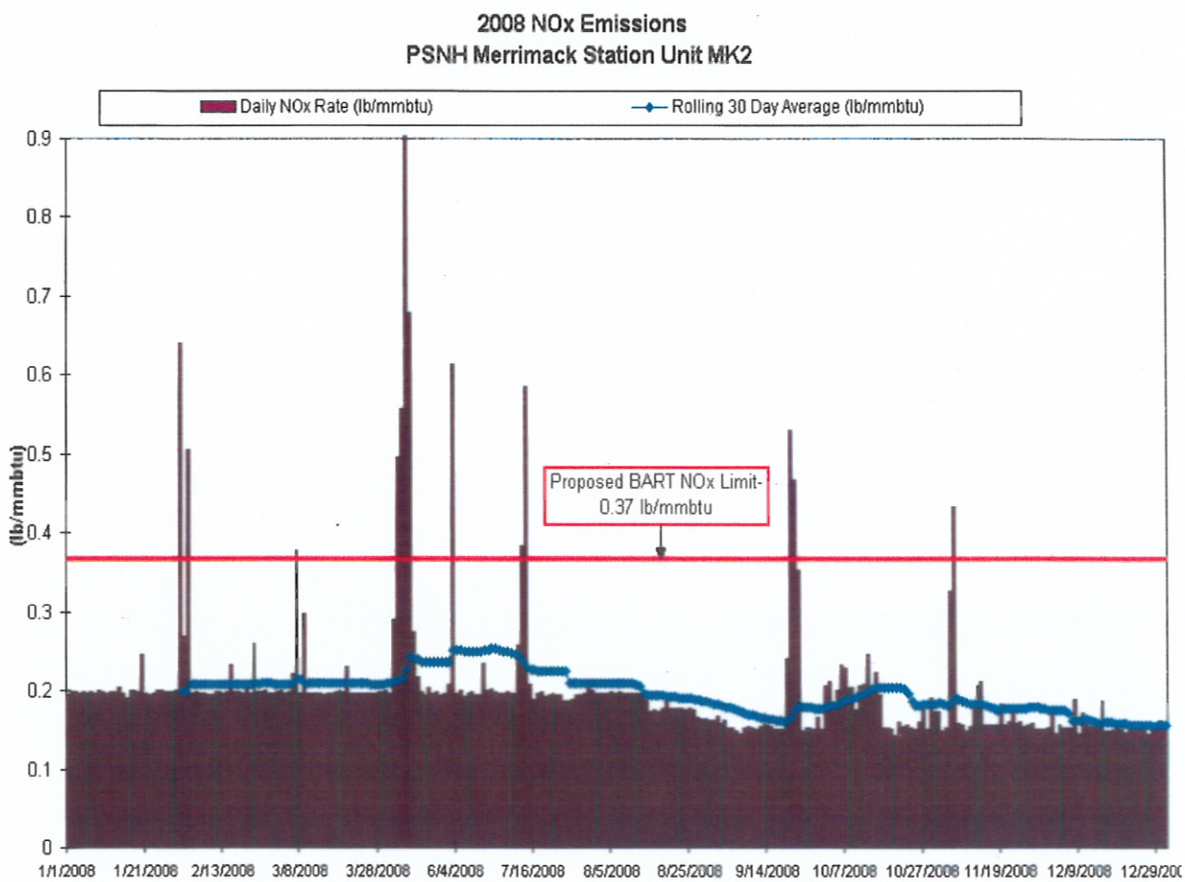
This limitation is also not consistent with the MANE-VU recommended level of BART PM control for non-CAIR EGUs, which is 0.02-0.04 lb per million BTUs. It is not clear why New Hampshire is imposing a less stringent limit. In the November 19, 2010 draft Attachment X to your Region Haze SIP, the controlled PM emissions from MK2 with the current ESPs are stated to be 210 tons per year. Based on the average annual heat input from 2002-2006, this would be equivalent to an emission rate of less than 0.02 lbs per million BTU. Therefore, additional documentation is needed to support an emission limit of 0.08 lb per million BTUs.

5) In Env-A 2302.02(a), New Hampshire is proposing an SO_2 emission limit of 0.50 lb per million BTUs on a calendar monthly average basis. This would be applicable to PSNH's Newington Station Unit NT1.

This limitation is not consistent with the MANE-VU recommended level of BART SO_2 control for non-CAIR EGUs, which is the use of natural gas or 0.3% sulfur content by weight fuel oil. Also, as referenced in comment #3 above, New Hampshire should use a 30-day rolling average as stated in EPA's Guidelines for BART Determinations Under the Regional Haze Rule.

EPA will need additional documentation to support an emission limit of 0.50 lbs per million BTUs. We note that we recently received draft revisions to your Regional Haze SIP dated November 19, 2010. EPA will provide further comments to NH DES regarding the documentation provided to support a BART limit of 0.50 lbs per million BTU.


2009 NOx Emissions
PSNH Merrimack Station Unit MK2
Daily NOx Rate (lb/mmbtu)
Rolling 30 Day Average (lb/mmbtu)
(lb/mmbtu)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Proposed BART NOx Limit-
0.37 lb/mmbtu
1/1/2009
1/21/2009
2/10/2009
3/7/2009
3/27/2009
4/18/2009
5/8/2009
6/2/2009
6/22/2009
7/15/2009
12/5/2009
12/25/2009


2008 NOx Emissions
PSNH Merrimack Station Unit MK2
Daily NOx Rate (lb/mmbtu)
Rolling 30 Day Average (lb/mmbtu)
(lb/mmbtu)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Proposed BART NOx Limit-
0.37 lb/mmbtu
1/1/2008
1/21/2008
2/13/2008
3/8/2008
3/28/2008
6/4/2008
7/16/2008
8/5/2008
8/25/2008
9/14/2008
10/7/2008
10/27/2008
11/19/2008
12/9/2008
12/29/200