

**FINDINGS OF FACT AND DIRECTOR'S DECISION**  
**In the Matter of the Issuance of a Title V Operating Permit To**  
**Public Service Company of New Hampshire, Merrimack Station**  
**Located in Bow, New Hampshire**  
**Facility Identification # 3301300026; Application # FY96-TV048**

The Clean Air Act Amendments of 1990 (CAAA) established a new federal permit program for the nation's largest emission sources (called "major sources"). The CAAA required states to develop and implement this program consistent with federal regulations. The state rules implementing this operating permit program, commonly called "Title V," took effect in New Hampshire on June 30, 1995. The Title V Operating Permit allows the facility to operate the devices listed in the permit according to terms and conditions specified in the permit. The Title V Operating Permits are issued for a period of 5 years.

There are typically four phases in the Title V Operating Permitting process:

1. First, the permit application undergoes an initial review by the New Hampshire Department of Environmental Services, Air Resources Division, Bureau of Permitting and Environmental Health (DES) to ensure that the information submitted is timely, complete, and addresses all appropriate regulatory requirements.
2. After the application has been deemed administratively complete, DES undertakes an extensive technical review, including but not limited to facility site visits and an analysis of historical information. Once DES has completed this review and is confident that the application accurately reflects the facility's operations, DES develops a "draft Title V Operating Permit." The draft Title V Operating Permit contains all applicable regulatory requirements (both state and federal) that pertain to the facility.
3. Once the draft Title V Operating Permit is prepared, a notice is published as required by the New Hampshire Code of Administrative Rules, Env-A 622, *Permit Notice and Hearing Procedures: Title V Operating Permits* (under Env-A 622.02, *Public Notice*). The public, the United States Environmental Protection Agency (EPA), and any other interested parties are invited to submit comments on the draft Title V Operating Permit. An opportunity for a public hearing is also provided.
4. After all public comments have been received and evaluated by DES, a final determination regarding the permit is made by the Director of the Air Resources Division (Director). If the determination is favorable, the draft Title V Operating Permit is designated as "proposed" and sent to EPA for further review. A draft Title V Operating Permit may be modified as a result of comments received during the public comment period before it is sent to EPA as a proposed permit. In response to the public questions/concerns a formal document is generated to address public concerns and the changes made, if any. This document is called the "Findings of Fact and Director's Decision." The proposed permit is reviewed by EPA for up to 45 days. If EPA has no objections within this timeframe, the final permit is issued.

Any person aggrieved by the Director's decision can file an appeal with the Air Resources Council in accordance with the provisions of Env-A 622.09, *Appeals*.

## **Facility Description/Background**

Public Service Company of New Hampshire (PSNH), a subsidiary of Northeast Utilities, owns and operates a fossil fuel-fired electricity generating facility in Bow, New Hampshire, hereafter referred to as "PSNH Merrimack". The facility is composed of two utility boilers, two combustion turbines operating as load shaving units, an emergency generator, an emergency boiler, and coal handling systems which include primary and secondary coal crushers, coal piles, coal conveyor systems, and coal unloading from railcars and trucks. The facility operations also include various activities that are classified as insignificant or exempt activities.

The two utility boilers (MK1 and MK2) primarily burn bituminous coal and use No. 2 fuel oil in the cyclone burners on startups of the boilers; the two combustion turbines primarily burn No. 1 fuel oil or JP-4 aviation fuel; the emergency generator burns No. 2 fuel oil or diesel fuel; and the emergency boiler burns No. 2 fuel oil or on-road low sulfur diesel fuel. PSNH Merrimack emits nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), volatile organic compounds (VOCs), particulate matter (PM), carbon dioxide (CO<sub>2</sub>), state regulated toxic air pollutants (RTAPs), and federally regulated hazardous air pollutants (HAPs).

Utility boilers MK1 and MK2 are each equipped with selective catalytic reduction (SCR) systems to control NO<sub>x</sub> emissions. Each utility boiler is also equipped with two sets of electrostatic precipitators (ESPs) to control PM emissions. Each utility boiler stack is equipped with continuous emissions monitoring systems (CEMS) for NO<sub>x</sub>, SO<sub>2</sub>, and CO<sub>2</sub>, as well as continuous opacity monitoring systems (COMS).

PSNH Merrimack receives bituminous coal by railcar and by trucks. The coal conveyor systems are enclosed, where practical, and coal crushing occurs inside a building. PSNH Merrimack operates a flyash re-injection system on each utility boiler.

Bow is located in Merrimack County, which is an attainment area for ozone, nitrogen dioxide (NO<sub>2</sub>), particulate matter less than 10 microns in diameter (PM<sub>10</sub>), PM<sub>2.5</sub>, CO, and lead (Pb). "Attainment" means that the monitored air quality values are below their respective National Ambient Air Quality Standards. However, for air permitting purposes Merrimack County is currently treated as a serious ozone nonattainment area and as such, the ozone precursor pollutants NO<sub>x</sub> and VOC are treated as nonattainment pollutants.

Since the time the original Title V Operating Permit application was filed on July 1, 1996, DES has promulgated new rules applicable to PSNH – Merrimack Station, embodied in the *New Hampshire Code of Administrative Rules*, Chapter Env-A 2900 – *Multiple Pollutant Annual Budget Trading and Banking Program*, Chapter Env-A 3100 – *Discrete Emissions Reductions Trading Program*, Chapter Env-A 3200 – *NO<sub>x</sub> Budget Trading Program*, Chapter Env-A 4600 – *Carbon Dioxide (CO<sub>2</sub>) Budget Trading Program*, and Chapter Env-A 4800 – *CO<sub>2</sub> Allowance Auction Program*.

In addition, the New Hampshire legislature passed important rules for the control of SO<sub>2</sub>, NO<sub>x</sub>, mercury (Hg), and CO<sub>2</sub> in RSA Chapter 125-O:1 through O:28. The section concerning control of mercury emissions became effective on June 8, 2006 and set several milestones for achievement of progress for PSNH at its three power stations. As a result of the mercury regulations, PSNH Merrimack applied for a Temporary Permit to install a flue gas desulphurization (FGD) system for the two utility boilers. Temporary Permit TP-0008 was issued on March 9, 2009. It was a separate permitting action from this Title V Operating Permit

and terms and conditions from that permit are not included in the draft Title V Operating Permit. Once construction of the FGD system is completed, performance testing is conducted and the results accepted by DES, and the source (facility) is found to meet all terms and conditions of the Temporary Permit, it will be incorporated into this Title V Operating Permit, by way of a permit amendment.

### **Proposed Title V Operating Permit**

PSNH Merrimack is subject to the Title V Operating Permitting program because it is considered a major source of air emissions as defined in Env-A 101.113, *Definitions – “Major source”*, and also because the two large utility boilers are subject to the federal Acid Rain Program in 40 CFR Sections 72, 73, 75, 76, and 77.

On July 1, 1996, DES received the initial Title V Operating Permit application # FY96-TV048 from PSNH – Merrimack. On November 6, 1996, DES deemed the application complete in accordance with Env-A 609.11, *Completeness Determination*. For purposes of updating this application, additional information was received on August 29, 1996, April 28, 1998, January 16, 2003, May 15, 2009, and July 28, 2009.

The purpose of this permitting action is to consolidate all separately permitted devices into one permit. Currently, PSNH Merrimack has eleven individual permits and two NO<sub>x</sub> RACT Orders. (For the reasons stated above, the Temporary Permit issued for the Flue Gas Desulphurization project is not consolidated into this Title V Operating Permit at this time).

Once DES prepared a draft Title V Operating Permit, which contained all applicable requirements identified during DES's technical review, DES published a public notice stating that the draft permit was available for public review and comment. In accordance with Env-A 622, *Permit Notice and Hearing Procedures: Title V Operating Permits*, a notice of request for public comments and opportunity for a public hearing was published in the *Union Leader* and *Concord Monitor* on July 31, 2009. The notice invited public comment and indicated that any comments received during the public comment period would be considered in reaching a final decision.

The public notice also announced there would be a public hearing to be held on Thursday, September 3, 2009 at 6 p.m. in the DES Auditorium at 29 Hazen Drive, Concord, New Hampshire. The public notice specified that the deadline for receipt of written comments was 4 p.m. on Friday, September 18, 2009. In response to a written request from the Sierra Club to extend the written comment period, DES extended the deadline for written comments until 4 p.m. on October 20, 2009.

The public hearing was held on September 3, 2009 at 6:00 p.m. in the DES Auditorium at 29 Hazen Drive, Concord, New Hampshire. The purpose of the hearing was to receive public comment on the draft Title V Operating Permit for PSNH – Merrimack.

During the public hearing, citizens offered testimony and submitted written comments regarding the operation of PSNH – Merrimack, as well as comments regarding specific conditions of the draft Title V Operating Permit. Written comments were also received from other individuals prior to the October 20, 2009 deadline, including the applicant. These timely, written comments are addressed in the following discussion. Pursuant to Env-A 622.07 *Opportunity for Response*,

copies of all comments received by DES were forwarded to PSNH Merrimack for review and comment, if desired. PSNH Merrimack did not file a written response to the public comments.

### **Comments Received and DES Response to Comments**

During the public comment period and at the public hearing held on September 3, 2009, comments were received expressing concern over public health and environmental issues with respect to emissions from the PSNH Merrimack facility. Comments were received in support of and in opposition to DES's preliminary decision to issue a Title V Operating Permit to the PSNH Merrimack facility. Several comments received (both supporting and opposing the issuance of the Title V Operating Permit) were general in nature and did not raise a material issue of fact with respect to DES' preliminary decision to issue a Title V Operating Permit or to a specific permit condition. DES did not specifically address each of these comments, but instead grouped them into the following areas:

1. Comments Regarding Timing of the Title V Operating Permitting Action;
2. Comments Regarding Phasing Out of the Coal-Fired Power Plant at PSNH Merrimack;
3. Comments Regarding CO<sub>2</sub> Emissions From the Facility;
4. Comment Regarding Baseline Mercury Input and Emissions, Continuous Emissions Monitoring Systems for Mercury, and Mercury Removal;
5. Comments Regarding Frequency of Particulate Matter Stack Testing;
6. Comments Regarding More Stringent Emission Limitations;
7. Comments Regarding the Monitoring/Testing and Recordkeeping Requirements at the Facility;
8. Comment Regarding How the Stack Height Was Determined for the Scrubber Project;
9. Comment Regarding Why the Town of Bow is Not in a Nonattainment Area for Ozone;
10. Comments Regarding Poor Air Quality and Air Quality Action Days; and
11. Comments Related to Public Health.

DES also received comments that specifically pointed to a condition in the permit or contained numerous detailed comments. These comments are grouped by commenter:

12. Comments from the United States Environmental Protection Agency – Region I;
13. Comments from PSNH;
14. Comments from Conservation Law Foundation; and
15. Comments from the New Hampshire Sierra Club and its members.

#### **1. Comments Regarding Timing of the Title V Operating Permitting Action**

Commenters expressed concern that it has taken 13 years to issue the draft Title V Operating Permit. Given this timeframe, commenters believed that DES should not rush now to make a decision to issue a Title V Operating Permit, especially since the Temporary Permit for the scrubber is in the appeal process.

## DES Response

In 1996, DES received Title V Operating Permit applications from over 50 sources. DES also receives many (over a hundred) permit applications each year for temporary permits or state permits to operate. In late 1998, DES issued its first Title V Operating Permit. DES focused its earliest efforts on issuing the initial Title V Operating Permits to the less complicated sources. As time went on, DES processed applications for the more complex sources, including ones that had compliance issues and required compliance plans in their Title V Operating Permits. The Title V Operating Permit for PSNH Merrimack is one of the most complex permits that DES has encountered in that it combines eleven separate permits, two NO<sub>x</sub> RACT Orders, and new requirements for mercury and CO<sub>2</sub> reduction. DES also focused efforts on developing legislation to achieve emission reductions at this facility. Since the permit application for this facility was received, three major pieces of legislation affecting this facility have been passed—the Clean Power Act in 2002, the Mercury Reduction statute in 2006, and the carbon dioxide budget program/regional greenhouse gas initiative in 2008.

Initially, DES delayed the drafting of this permit to develop NO<sub>x</sub> RACT Orders, regulations, and Temporary Permits to meet statutory and regulatory requirements and to ensure that these major emission reduction requirements were incorporated into enforceable documents. The Title V Operating Permit cannot impose any new requirements on PSNH Merrimack; therefore, the “delay” in issuing the permit does not affect the applicability of any requirements, nor does the delay inhibit the enforcement of any applicable provisions.

In the Spring of 2009, the New Hampshire Sierra Club strongly encouraged DES to finalize its review of the Title V Operating Permit application for PSNH Merrimack. In part to accommodate this request, DES committed to expedite the process and complete its review and prepare a draft Title V Operating Permit. DES does not agree that any on-going issues, namely the appeal of the Temporary Permit (TP-008) issued to PSNH on March 9, 2009 will have any bearing on the Title V Operating Permit. These are two separate and distinct permitting actions. Should any conditions be changed as a result of the appeal process for the Temporary Permit, the Temporary Permit will first have to be modified. If the FGD system is installed and all compliance testing successfully completed, the conditions of the Temporary Permit will be incorporated into the Title V Operating Permit.

Finally, Env-A 622.08, *Decisions*, requires DES to either issue a proposed permit or deny the application within 30 working days of the close of the comment period following a public hearing or within 30 working days of receiving additional information necessary for making the decision. DES requested additional information from PSNH in a letter dated December 4, 2009. DES received the information from PSNH on January 29, 2010; therefore, DES is required to issue a proposed permit or deny the application by March 15, 2010. For this reason, DES cannot further delay taking action on this application.

## **2. Comments Regarding Phasing Out of the Coal-Fired Power Plant at PSNH Merrimack**

Many commenters expressed general concerns about the combustion of coal for the purposes of electricity generation and would like to see PSNH Merrimack Station's coal boilers phased out and replaced with a cleaner source of energy generation, in particular, with renewable sources of energy generation along with lower CO<sub>2</sub> emitting sources.

### DES Response

NH DES does not have the authority to address these comments directly during the Title V Operating Permit process. In accordance with 40 Code of Federal Regulations (CFR) Part 70, the intent of the Title V Operating Permit is to be an accumulation or clearing house of all existing operating limitations and state and federal requirements that are currently applicable to the facility. New emission limitations cannot be introduced into the Title V Operating Permit without first being included in either a temporary permit, a federally enforceable document (e.g., Consent Decree, Administrative Order, EPA-approved state implementation plan) or a state or federal law or regulation.

The State of New Hampshire, however, is dealing with the issue that the commenters have raised under other state programs. The Renewable Portfolio Standard (RSA 362-F), passed in 2007, requires that approximately 25% of the total electricity generation supplied to customers in 2025 must be from renewable energy sources. Although this requirement does not mandate the phase out of Merrimack Station, 25 percent of the electricity supplied to all NH customers will be produced by renewable energy facilities.

## **3. Comments Regarding CO<sub>2</sub> Emissions from the Facility**

Several commenters mentioned that PSNH Merrimack is the largest source of CO<sub>2</sub> emissions in the state of New Hampshire and that it should be shut down and replaced by alternate energy sources. Commenters suggested that the use of coal should be phased out with the institution of renewable portfolio standards. Some comments were received mentioning the possibility of federal legislation that could establish new CO<sub>2</sub> emission limits on PSNH Merrimack MK1 and MK2. These comments also raised questions as to whether MK1 and MK2 could meet a future CO<sub>2</sub> standard, noting that there is no current add-on control technology to reduce CO<sub>2</sub> emissions. In some cases, commenters requested that DES delay a decision on the issuance of the draft Title V Operating Permit until federal CO<sub>2</sub> legislation is developed. Commenters expressed concerns that after the announced \$457 million investment in the FGD system, a future federal CO<sub>2</sub> standard may prohibit further operation of MK1 and MK2.

### DES Response

Future federal CO<sub>2</sub> legislation that could affect PSNH Merrimack is outside the scope of the Title V Operating Permit under consideration. DES does not have the legal authority

to impose federal standards that have yet to be promulgated. Further, any federal rulemaking process will very likely take at least another year. DES is responsible for incorporating all currently applicable federal and state air quality statutes and regulations into the Title V Operating Permit.

With regard to currently applicable state CO<sub>2</sub> requirements, House Bill 1434 was passed in 2008 approving New Hampshire's participation in a ten state effort, known as the Regional Greenhouse Gas Initiative (RGGI). Interim Rules Env-A 4600, *CO<sub>2</sub> Budget Trading Program* and Env-A 4800, *CO<sub>2</sub> Allowance Auction Program* became effective on October 1, 2008. The current rules (Env-A 4600) became effective on April 1, 2009. RGGI is a market-based CO<sub>2</sub> "cap and trade" program. The provisions of this state statute and regulation have been incorporated into PSNH Merrimack's Title V Operating Permit.

In addition, the EPA proposed a regulation on October 27, 2009 [74 FR 55292-55365], that would require sources with greenhouse gas emissions in excess of 25,000 tons per year (such as PSNH Merrimack Station) to be classified as an existing major source under the federal Prevention of Significant Deterioration (PSD) permitting program. Among the items on which EPA solicited comments is the proposed major source threshold of 25,000 tons per year and a major modification threshold of 10,000 to 25,000 tons per year. EPA has not yet finalized the PSD program applicability thresholds for greenhouse gas emissions; therefore, DES cannot incorporate any federal CO<sub>2</sub> and other greenhouse gas emissions requirements in the Title V Operating Permit. Further, if federal greenhouse gas emission requirements are promulgated, DES will follow the procedures of Env-A 600 to incorporate any revisions.

As mentioned earlier in this document, Env-A 622.08, *Decisions*, requires DES to either issue a proposed permit or deny the application within 30 working days of the close of the comment period following a public hearing or within 30 working days of receiving additional information necessary for making the decision. DES requested additional information from PSNH in a letter dated December 4, 2009. DES received the information from PSNH on January 29, 2010; therefore, DES is required to issue a proposed permit or deny the application by March 15, 2010. For this reason, DES cannot further delay taking action on this application.

#### **4. Comment Regarding Baseline Mercury Input and Emissions, Continuous Emissions Monitoring Systems for Mercury, and Mercury Removal**

Commenters expressed their concern over how the baseline mercury input and emissions from PSNH Merrimack was determined. The commenter asked how mercury was measured and what test methods were used for determining mercury emissions. The commenter also expressed their concern over the fact that currently there is no Continuous Emissions Monitoring System (CEMS) available that is capable of continuously measuring mercury emissions and mercury reductions required from sources. This commenter also claimed that the FGD system will not remove any mercury.

### DES Response

RSA 125-O:14 established the mechanism for how baseline mercury input and baseline mercury emissions are to be calculated. PSNH Merrimack collected representative monthly samples of coal traditionally used at the facility for 12 consecutive months. These samples did not include any trial or test coals used. The coal samples were analyzed using the American Society for Testing Materials testing procedures (ASTM D3684-01) to determine the average mercury content of the fuel for each unit (in lbs of mercury input on a dry basis per ton of coal combusted). The mercury content from these analyses shall then be multiplied by the average annual throughput of coal for each of the affected units based on the actual coal input for the period of 2003, 2004, and 2005 to determine the average pounds of mercury input per year for each affected source. The sum of the average annual pounds of mercury input for each affected source is the baseline mercury input for the facility.

To determine baseline mercury emissions, RSA 125-O:14 required PSNH to perform a minimum of four stack tests using appropriate testing protocols. PSNH used US EPA Test Methods 1 through 4, and Method 29 (for mercury) as contained in 40 CFR 60, Appendix A. From the results of the stack tests, PSNH must determine a statistically valid average mercury emissions rate for each affected source (in pounds of mercury emitted per ton of coal combusted). The average mercury emissions rate for each affected source shall be multiplied by the average annual throughput of coal for the years 2003, 2004, and 2005 for each affected source to determine the average pounds of mercury emitted per year. The sum of these annual average emissions from each affected source is the baseline mercury emissions for the facility.

DES is still reviewing the baseline mercury input and baseline mercury emissions information. DES requested additional information from PSNH related to the baseline mercury input. After DES reviews this information, DES will issue a draft decision and make it available for public comment. After considering public comments, DES will issue a final decision on the baseline mercury input and baseline mercury emissions.

Currently, US EPA has not approved a CEMS for measuring mercury emissions. Prior to the availability and operation of CEMS for mercury, and subsequent to the baseline emissions testing required under RSA 125-O:14, RSA 125-O:15 requires PSNH Merrimack to conduct stack tests or use another methodology approved by DES, to determine mercury emissions levels from MK1 and MK2 and other affected sources. Any stack tests performed shall employ a federally recognized and approved methodology proposed by the owner and approved by DES. When a CEMS for mercury and respective federal performance specification and audit standards becomes available, the law requires PSNH to install the CEMS at MK1 and MK2 and other affected sources as deemed appropriate by DES.

The purpose of determining the baseline mercury input is to develop a baseline from which the 80 percent mercury reduction requirement is calculated. The purpose for determining the baseline mercury emissions is to develop a baseline for determining early

emission reduction credits should PSNH achieve and DES approve mercury emission reductions prior to the operation of the FGD system. The primary purpose of the FGD system is to reduce mercury emissions so that PSNH can meet the mercury emission reduction requirement. A side benefit of the FGD system is a significant reduction in SO<sub>2</sub> emissions.

DES disagrees with the commenter regarding the removal of mercury by the FGD system. The commenter did not provide any documentation to support the claim that the FGD system will not remove any mercury. The FGD system to be installed and operated at PSNH Merrimack has been designed with a vendor guarantee of 80 percent reduction in mercury emissions. The FGD system as used in similar applications is a proven technology for achieving reductions in oxidized mercury emissions.

## **5. Comment Regarding Frequency of Particulate Matter Stack Testing**

A commenter indicated that particulate matter testing once every 5 years was inadequate and should be done more frequently, i.e., once every 2 years would be a better indicator of compliance with particulate matter standards contained in the draft Title V Operating Permit.

### DES Response

DES did not change the permit to a more frequent testing schedule because the permit and state law currently allow DES to request more frequent testing when warranted. In addition, the particulate matter emissions from PSNH MK1 and MK2 are well below any applicable permit limits as indicated by the most recent stack testing conducted. The Draft Title V Operating Permit in Condition VIII, I, Table 9, Items 48 and 49 requires PSNH to test for total suspended particulate (TSP) and PM<sub>10</sub> at least once every 5 years and upon request by DES and/or EPA. In addition, Condition VIII, I, Table 9 Item 40 of the Draft Title V Operating Permit requires PSNH to monitor the fields out of service for each ESP, and Condition VIII, K, Table 11, Items 18 and 19 of the Draft Title V Operating Permit requires PSNH to report when fields are out of service.

All stack testing results from the past ten years, including the most recent tests conducted in May and June of 2009, show that PSNH MK1 and MK2 emissions are orders of magnitude below the particulate matter emission limits. The 2009 stack test at MK2 showed that the TSP emission rate was 0.032 lb/MMBtu as compared to a limit of 0.227 lb/MMBtu. The 2009 stack test at MK1 showed that the TSP emission rate was 0.02 lb/MMBtu as compared to a limit of 0.27 lb/MMBtu. Finally, although DES is not currently revising the particulate matter testing frequency, DES is reviewing a more frequent testing schedule as part of regional haze requirements.

## **6. Comments Regarding More Stringent Emission Limitations**

Commenters stated that PSNH Merrimack's equipment is not up to current standards, even with the proposed FGD system. A commenter believes that the facility has been

grandfathered and is not required to meet more stringent requirements under the federal New Source Review program or the New Source Performance Standards. The commenter acknowledged that first the laws and regulations should be changed to require more stringent emission limitations.

#### DES Response

PSNH Merrimack is meeting all of its applicable state and federal emission limitations. DES can only impose the applicable requirements of state and federal statutes and regulations. New Hampshire has historically adopted more stringent requirements than the US Congress and US EPA. Key examples of such programs include the Clean Power Act, the Mercury Statute (RSA 125-O), the CO<sub>2</sub> Budget Program, and the Regulated Toxic Air Pollutant program. PSNH Merrimack is subject to all of these requirements. Currently, PSNH has not triggered new source review (NSR), but in accordance with 40 CFR 52.21 (b)(21) and (33,) PSNH is required to monitor its emissions to determine if the 2008 Unit MK2 turbine project will trigger NSR. Further, NSR requirements may apply to other projects in the future, depending on how the project may impact emissions from the facility.

#### **7. Comments Regarding the Monitoring/Testing and Recordkeeping Requirements at the Facility**

Several commenters expressed concern over the level of monitoring that is required of the facility, i.e., there is not enough monitoring required. Commenters also stated that the testing and recordkeeping requirements are inadequate. Some commenters asked how we know that the facility is continuously in compliance with all of the terms and conditions in the permit.

#### DES Response

PSNH Merrimack is required to have continuous emissions monitoring systems (CEMS) on MK1 and MK2 for NO<sub>x</sub>, SO<sub>2</sub>, and CO<sub>2</sub>. In addition, MK1 and MK2 are required to have continuous opacity monitoring systems (COMS) to measure opacity on a continuous basis. The Draft Title V Operating Permit requires PSNH to test PM and ammonia emissions at least once every five years or upon request by DES and/or EPA.

Env-A 800 and 40 CFR 75 contain the performance specifications for CEMS and COMS, including required daily calibration checks and quarterly relative accuracy and linearity audits, and depending on the as-tested accuracy of the CEMs, either semi-annual or annual relative accuracy test audits. In addition, data availability requirements and missing data substitution requirements are included. Env-A 800 and 40 CFR 60 specify the requirements for performing compliance stack testing. DES personnel are also on-site at the facility to observe all annual audits and stack testing.

Table 9 of the Draft Title V Operating Permit also lists other monitoring and testing requirements. Table 10 of the Draft Title V Operating Permit lists recordkeeping

requirements, and Table 11 of the Draft Title V Operating Permit lists reporting requirements. For each operational and emission limitation in Tables 4 and 6 of the Draft Title V Operating Permit, an associated monitoring/testing, recordkeeping and reporting requirement in the permit ensures that PSNH is evaluating compliance with the limitations.

In addition, PSNH is required to report permit deviations within 24 hours of discovery of the permit deviation. DES also conducts periodic compliance inspections and regularly reviews the monitoring reports that PSNH is required to submit. Annually, PSNH is also required to certify compliance with all the permit requirements. This annual compliance certification must be signed by the responsible official. Consequences for a false certification range from an administrative enforcement action to possible criminal prosecution.

**8. Comment Regarding How the Stack Height was Determined for the Scrubber Project**

The commenter questioned how the stack height for the new stack associated with the scrubber project was determined.

DES Response

The stack height of the scrubber stack is not germane to this permitting action. All of the provisions in the Temporary Permit (TP-008), including the height of the new stack associated with the FGD system, are not incorporated into this Title V Operating Permit, because the FGD system and related components are still under construction. Once construction of the FGD system is final and all compliance testing is complete, the conditions of the Temporary Permit will then be incorporated into the Title V Operating Permit.

The stack height proposed by PSNH was calculated using the EPA Good Engineering Practice (GEP) Guidelines. The guidelines provide a method for determining a GEP formula stack height based on the dimensions of the dominant structures located in the vicinity of the stack. The Building Profile Input Program (BPIP) (with the PRIME option) was used to define both the GEP stack height and the effective building dimension of the dominant structure. The formula GEP stack height for the new stack at Merrimack Station is 135.64m (445ft).

**9. Comment Regarding Why the Town of Bow is not in a Nonattainment Area for Ozone**

A commenter questioned why the Town of Bow in Merrimack County, New Hampshire is not in a nonattainment area for ozone.

DES Response

Under the 1990 Clean Air Act Amendments, all or portions of five counties in New Hampshire were designated as nonattainment areas for the (now former) 1-hour National Ambient Air Quality Standard (NAAQS) of 0.12 parts per million (ppm) for ground-level ozone (see *Code of Federal Regulations* 40 CFR 81.330):

- All of Strafford County and large portions of Hillsborough and Rockingham Counties were designated as “serious” nonattainment areas;
- The remaining portions of Hillsborough and Rockingham counties plus all of Merrimack County were designated as “marginal” nonattainment areas; and
- All of Cheshire County was designated as an “unclassifiable” nonattainment area.

On July 18, 1997, EPA promulgated a new 8-hour ozone standard to replace the 1-hour standard for ground level ozone (*Federal Register*, 62 FR 38855). After an extensive scientific review, EPA concluded that the 1-hour ozone standard did not provide sufficient health protection against extended periods of moderately elevated ozone concentrations. The new 8-hour ozone NAAQS, which was set at a level of 0.08 ppm and is based on an 8-hour average of ambient ozone concentrations, more directly relates to ozone levels associated with health effects.

The 8-hour ozone NAAQS was the subject of numerous legal challenges, which delayed its implementation for several years. On April 30, 2004, after resolution of the legal issues, EPA published final attainment designations (69 FR 23857) for the 1997 8-hour ozone NAAQS.

When the attainment classifications for the 8-hour ozone standard were issued in 2004, some locations in New Hampshire that were previously found to be in nonattainment for the 1-hour ozone standard were determined to be in attainment for the 8-hour standard, including the City of Concord and Town of Bow. Although the 8-hour standard superseded the 1-hour standard, anti-backsliding provisions established in 40 CFR 51.905 require states to develop maintenance plans to prevent degradation of air quality in former nonattainment areas that were reclassified to attainment, such as the City of Concord and Town of Bow.

## **10. Comments Regarding Poor Air Quality and Air Quality Action Days**

Several people providing oral testimony at the public hearing presented concerns about poor air quality, air quality action days, ground level ozone concentrations, and fine particulate matter concentrations.

### DES Response

This comment is more general in nature and does not raise a material issue of fact with respect to any specific conditions in the draft Title V Operating Permit. Where commenters specifically identified conditions in the draft permit with respect to these topics, they are addressed in this document. Below is a general discussion of air quality

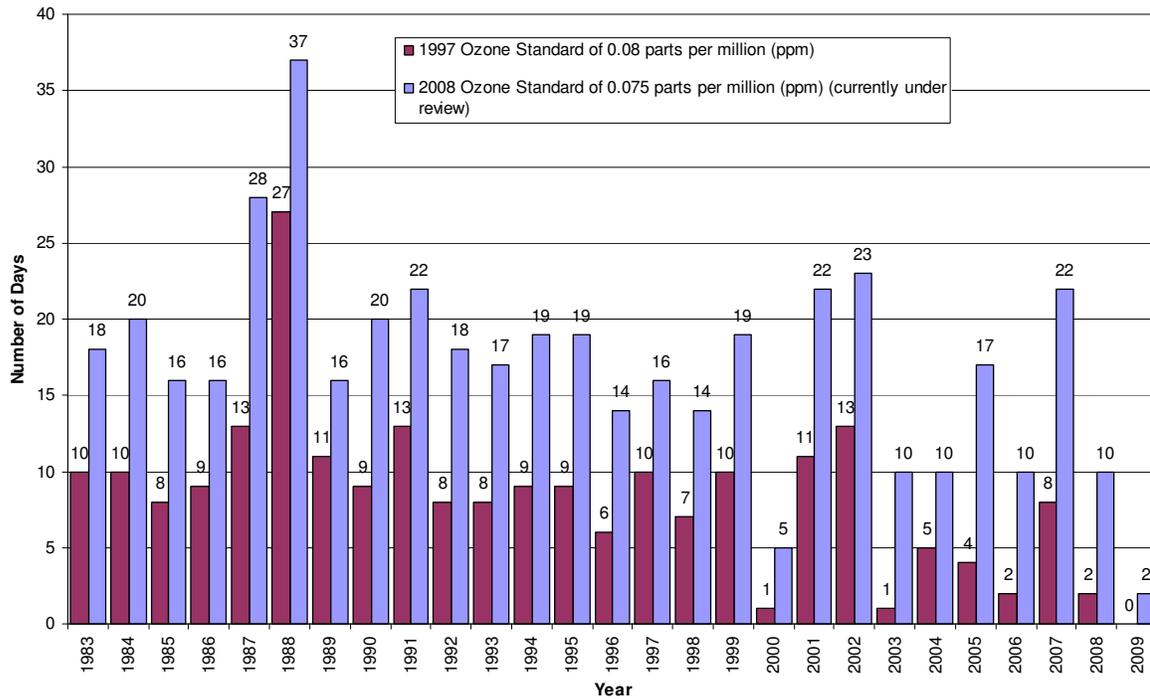
in New Hampshire. For further information on these topics, please visit the DES' Air Resources Division website at <http://des.nh.gov/organization/divisions/air/index.htm>.

Air quality in New Hampshire has generally improved over the last 10 years, based on monitored values of the two most problematic criteria pollutants, ozone (O<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>). DES issues an Air Quality Action Day (AQAD) alert when air pollution levels in the state are predicted to exceed federal air quality standards and, therefore, reach unhealthy levels. The air pollutant that most frequently exceeds federal air quality standards in New Hampshire is ozone. DES is currently forecasting and issuing AQAD alerts using the ozone threshold of 0.075ppm (8-hr avg.) which was proposed by EPA in 2008. On September 16, 2009, EPA announced it is reconsidering the standard and will issue a final decision by August 2010.

New Hampshire experiences elevated levels of ozone air pollution when winds transport thousands of tons per day of ozone (and compounds which are involved in its production) from out-of-state source areas such as Boston, New York City and the Ohio River Valley into the region. The pollutants come from a range of sources that include power plants, vehicles, and miscellaneous industrial and commercial facilities. New Hampshire sources, especially mobile sources, contribute somewhat to the ozone problem, but emit much less pollution than out-of-state sources located upwind. Air pollution transport is the most common condition leading to unhealthy air quality levels in New Hampshire.

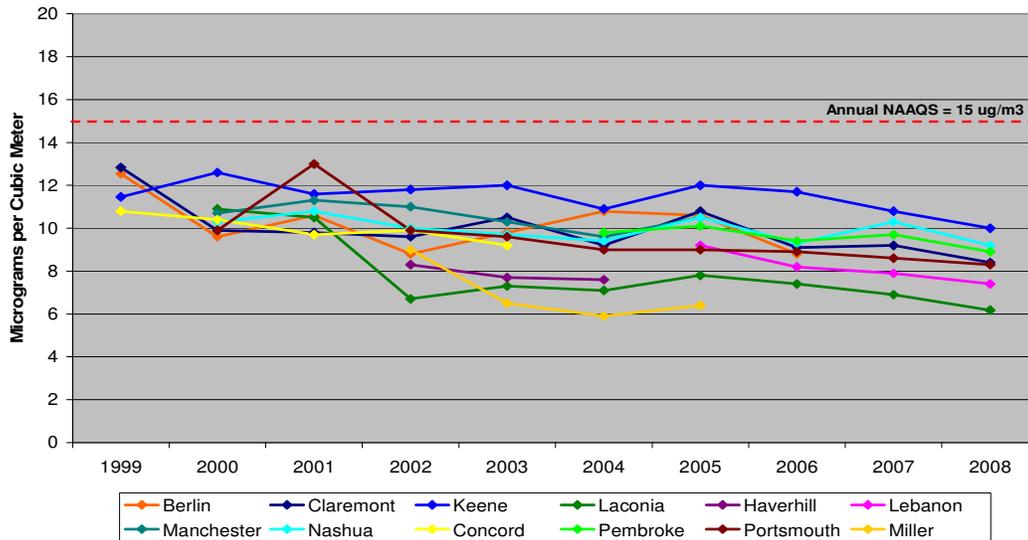
As illustrated in the graph below, the number of days exceeding the 8-hour ozone standard in New Hampshire has declined over the past 20 years.

### Days Exceeding the 8- Hour Ozone Standard in New Hampshire



Fine particle matter (PM<sub>2.5</sub>) air pollution events can occur any time of year; however, they are most common during the winter months. To better protect public health, EPA lowered the 24-hr fine particle (PM<sub>2.5</sub>) standard from 65 ug/m<sup>3</sup> to 35 ug/m<sup>3</sup>, (the annual standard is 15 ug/m<sup>3</sup>). The annual PM<sub>2.5</sub> trends in New Hampshire are summarized in the following chart.

**Annual PM2.5 Trends (Annual Mean)  
for New Hampshire**



## 11. Comments Related to Public Health

Many commenters expressed concern over the potential health impacts on local residents resulting from emissions of air pollutants from the PSNH Merrimack. Some commenters took the position that even with the mercury and sulfur dioxide reductions required to be achieved by the FGD system, this facility will still emit unacceptable levels of air pollution, and the Title V Operating Permit should be denied, or DES should require the facility to shut down. Others believe PSNH Merrimack currently emits unacceptable levels of air pollution; however, they urged DES to issue the Title V Operating Permit to ensure that emission reductions and associated monitoring, recordkeeping and reporting occur.

### DES Response

In the past, DES has received similar concerns about the health impacts of PSNH Merrimack. In fact, many of the emission reduction strategies initiated over the past ten years were passed in part to address these concerns: the Clean Power Act addressing SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> in 2002, the Mercury Reduction statute in 2006, and the CO<sub>2</sub> budget program/regional greenhouse gas initiative in 2008. Note that the Title V Operating Permit will not impose any new requirements on PSNH; therefore, regardless of whether the Title V Operating Permit is issued, PSNH must meet all currently applicable air quality requirements.

In 2001, a resident of Suncook Village (located less than one mile from PSNH Merrimack) petitioned the US Agency for Toxic Substances and Disease Registry (ASTDR) to examine the air quality and health effects associated with PSNH Merrimack. In response, New Hampshire's Environmental Health Program (EHP) prepared a health

consultation for ATSDR that evaluated 2002-2003 air quality data and documented community health concerns for the Suncook area. To update and expand the original health consultation, EHP prepared and released on March 8, 2007, a Public Health Assessment of ambient air quality in Suncook Village. This study examined ambient air quality data (2004-2006), cancer incidence and hospital emergency room visits for respiratory-related diagnoses<sup>1</sup>.

The overall conclusion of the report is that the ambient air in Suncook Village does not present a health hazard to the general population; however, during a few infrequent days or hours, air pollution levels may cause adverse health effects in asthmatics during outdoor exertion. For sulfur dioxide, the emissions are associated with local sources and are transported a short distance by strong northwest winds primarily in winter months. Ozone events originate from both regional and more distant sources and are transported long distances by southerly winds in summer months. PM<sub>2.5</sub> events typically originate from the same place as ozone events.

As an added benefit of the mercury reduction statute in RSA 125-O: 11-18, which became effective on June 8, 2006, PSNH Merrimack must install an FGD system which will also reduce SO<sub>2</sub> emissions by at least 90 percent below uncontrolled levels by July 1, 2013.

Pursuant to Env-A 606, Air Pollution Dispersion Modeling Impact Analysis Requirements, DES also requires a new or modified source to conduct air quality dispersion modeling to assess compliance with the National Ambient Air Quality Standards (NAAQS). The primary NAAQS is established to protect public health including the health of sensitive populations such as asthmatics, children, and the elderly. The secondary NAAQS is established to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. As part of the Temporary Permit application for the FGD system, PSNH was required to undertake an ambient air quality impact analysis as prescribed under state and federal rules. The modeling predicted no exceedances of the primary and secondary NAAQS.

DES also established ambient air limits (AALs) for regulated toxic air pollutants to protect public health. Pursuant to Env-A 1400, *Regulated Toxic Air Pollutants*, a facility must demonstrate compliance with the AALs established for each regulated pollutant using one of the methods in Env-A 1405: 1) Air dispersion modeling analysis; 2) De minimis emission level method; 3) In-stack concentration method; 4) Adjusted in-stack concentration method; or 5) Calculations, results or analysis of an alternative method for demonstration of compliance. PSNH has demonstrated compliance with Env-A 1400 through air quality dispersion modeling.

In conclusion, DES has determined through the air quality dispersion modeling and the public health assessment that PSNH Merrimack adequately addresses concerns related to public health impacts of regulated air pollutants.

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<sup>1</sup> This study (Suncook Ambient Air Quality Public Health Assessment) can be found on the DES website at <http://des.nh.gov/organization/divisions/air/pehb/ehs/ehp/categories/publications.htm>.

## 12. Comments from the United States Environmental Protection Agency – Region I

- a. Comment regarding CEM Valid Hour requirements in Condition VIII, I, Table 9, Item 16 – In order for an hour to be valid, 40 CFR 75.10(d) requires one data point in each 15-minute quarter. NHDES requires a minimum of 42 minutes of CEM readings to be taken for a valid hour. How did NHDES determine that 42 minutes of CEM data meets the EPA requirement of a data point per quarter? We recommend the footnote clarify how the 15-minute requirement is met.

### DES Response

DES clarified the permit by deleting the footnote, because both valid hour requirements are not comparable and both must be met. The CEM could meet one of the valid hour requirements, but not the other. Both requirements were already listed in the Draft Title V Operating Permit.

- b. Comment regarding Condition VII. C – Paragraph VII.C references the early mercury emission reduction methods of RSA 125-O:13. The statute is enforceable by the state only and should be labeled as such.

### DES Response

DES clarified the permit by adding “state enforceable only” as follows:

C. Early Mercury Emission Reduction Methods (RSA 125-O:13) (State enforceable only):

- c. Comment regarding Table 5 – Not all emission limitations “specify and reference the origin and authority for each term or condition, and identify any difference in form as compared to the applicable requirement upon which the term or condition is based,” as required by 40 CFR 70.6(a)(1)(i).

### DES Response

DES deleted Table 5 because these emission limitations are already included in the permit in Condition VIII, B, Table 6 of the Draft Title V Operating Permit along with the necessary regulatory citations.

- d. EPA comments regarding the modeling portion of the engineering summary.

DES Response

DES included the modeling demonstrations as part of the draft Title V Operating Permit for informational purposes only to provide the public with a comprehensive review of the facility. These modeling demonstrations were not completed as part of the Title V Operating Permit process and are therefore not germane to this proceeding. Federal regulation, specifically 40 CFR Part 70, does not require an applicable facility to complete any additional modeling reviews as part of the Title V Operating Permit application process. The referenced modeling reviews were completed in accordance with other state requirements, specifically as part of the construction permit process for the installation and operation of the Flue Gas Desulphurization (FGD) system for which a Temporary Permit was issued by the state, and for demonstration with the state-only regulation Env-A 1400, *Regulated Toxic Air Pollutants*.

**13. Comments from PSNH**

- a. General Comment: *PSNH requests that the reporting requirements be streamlined where possible, to eliminate redundancy. Grouping the compliance assessments and submittals being conducted into single reporting requirements would be beneficial for both the submittal and review of information. For example, the permit as written contains four separate compliance certification reporting requirements, each with a different deadline.*

PSNH clarified this general comment in a letter to DES from PSNH dated January 29, 2010:

*PSNH's request that the reporting requirements contained in the draft Title V Operating Permit be streamlined, where possible, is a general comment, rather than a request for an alternative time period for recordkeeping and reporting. Streamlining the reporting requirements would eliminate redundancy and simplify the permit. It would also ease the compliance evaluations routinely conducted by DES and PSNH. The multiple compliance certification requirements (contained in Table 11, Items 24, 25, 26, and 33) and statements of certification (Table 11, Items 21, 22, 31, and 32) were provided as an example of permit requirements which could be simplified.*

### DES Response

DES attempted to streamline the Title V Operating Permit where possible. DES cannot streamline Condition VIII, K, Table 11, Items 24, 25, 26, and 33 of the Draft Title V Operating Permit without PSNH requesting an alternative time period. Env-A 912, *Alternative Time Periods*, outlines the procedure by which a facility owner or operator may request an alternative time period for recordkeeping or reporting requirements pursuant to Env-A 900.

DES cannot streamline the statement of certification requirements because Condition VIII, K Table 11, Items 21, 22 and 32 of the Draft Title V Operating Permit list the specific language to be included in the certification statements. Condition VIII, K, Table 11, Item 31 of the Draft Title V Operating Permit contains certification statements that are specific to the CO<sub>2</sub> budget program; therefore, this condition cannot be streamlined.

- b. General Comment: *PSNH also believes an effective permit should avoid burdensome administrative monitoring and reporting that is duplicative, unnecessary or adds no environmental benefit. Merrimack Units 1 and 2 each have a Continuous Emissions Monitoring (CEMs) system to measure emissions. This continuously recorded data, submitted to DES ARD quarterly, accounts for the vast majority of PSNH's emissions, which has all the required information included. Conversely, specific to minor emissions sources located at the station, PSNH is concerned with the substantial increase in monitoring, recordkeeping, and reporting requirements contained in the draft Title V Operating Permit, especially those that are duplicative or burdensome without additional environmental benefit which we believe are unnecessary. Also, many new administrative tasks do not actually impact compliance and/or emissions.*

### DES Response

The monitoring, recordkeeping and reporting requirements are necessary to ensure compliance with permit limits and all applicable state and federal rules and regulations. Where requested, DES reviewed the draft permit and streamlined any duplicative conditions to the extent possible. If the applicant believes any additional requirements are duplicative, it is incumbent upon them to identify these specific permit conditions and explain how they are duplicative. The applicant did not specifically identify any duplicative permit conditions in this comment, therefore no changes have been made in response. In addition, DES made this Title V Operating Permit similar to the PSNH Newington and PSNH Schiller Title V Operating Permits, where possible, as requested by US EPA during the issuance of PSNH Newington and PSNH Schiller Title V Operating Permits.

- c. Comment #1: *Condition I., Facility Description of Operations, Paragraph 1. – The facility description should be revised, consistent with the Title V Operating Permit issued to Schiller Station, to exclude specific mention of insignificant activities. PSNH requests that “and coal handling systems including primary and secondary*

*coal crushers, coal piles, coal conveyor systems, and coal unloading from railcars.” be omitted from the facility description.*

DES Response

DES revised the text to be consistent with PSNH Schiller Station's Title V Operating Permit by excluding the specific mention of insignificant activities. DES revised the permit as follows:

“The facility is comprised of two utility boilers, two combustion turbines operating as load shaving units, an emergency generator, an emergency boiler and ~~coal handling systems including primary and secondary coal crushers, coal piles, coal conveyor systems, and coal unloading from railcars.~~”

- d. Comment #2: *Condition III.A., Table 1, Footnotes 1.-7. – Consistent with the language contained in the Maximum Operating Condition”, the footnotes should be revised to refer to fuel consumption “rates” rather than “limits”. PSNH requests that this revision is also made in the Engineering Summary.*

DES Response

DES changed “limits” to “rates” in the Title V Operating Permit and the Engineering Summary, because these fuel consumption rates are based on the maximum design capacity of the units and the assumed heating values. If the heating value of the fuel varies, then the fuel consumption rate will change accordingly.

- e. Comment #3: *Condition III.A., Table 1 MKPCC and MKSCC – The maximum operating condition needs to be revised to state that the maximum operating rate of each crusher shall be limited to the stated ton per hour rate.*

PSNH clarified this comment in a letter to DES from PSNH dated January 29, 2010 by noting that the primary coal crusher system consists of two crushers that operate in parallel (MKPCC). PSNH also stated, “The [secondary coal crusher] SCC consists of two crusher systems each of which employ two crushers (for a total of four crushers) that operate in parallel.” PSNH noted, “The requested revision is simply a clarification and will not increase the maximum operating throughput of either the PCC or SCC.”

DES Response

Based upon this comment, DES clarified the permit by changing the description of the MKPCC and MKSCC as follows:

*Primary Coal Crusher System consisting of two crushers that operate in parallel.*

*Secondary Coal Crusher System consisting of two crushing systems employing two*

*crushers (for a total of four crushers) operating in parallel.*

Under the maximum operating conditions for MKPCC and MKSCC, DES changed "Primary Coal Crusher" to "MKPCC" and "Secondary Coal Crusher" to MKSCC to clarify that the maximum throughput is for the whole system as described under "Description of Emission Unit." For example, the maximum throughput of MKPCC is the total combined throughput of the two crushers that are part of the primary coal crushing system.

- f. *Comment #4: Condition VII.A.9. Consistent with the deadline for submittal contained in Env-A 802.11, the deadline for submittal of a report following a trial test burn should be 60 days.*

DES Response

DES changed Condition VII. A. 9 of the permit to be consistent with Env-A 802.11 by requiring submittal of the summary report within 60 days after completion of the stack test. The requirement to submit the summary report within 30 days after completion of the stack test is not practical because it does not provide adequate time for the third-party testing contractor to analyze the test results and summarize them.

- g. *Comment #5: Condition VIII.B.1., Table 5, Item 3. – PSNH requests a footnote be inserted specific to MK1 stating "Full operation is defined as a unit operating with the CEM activated collecting valid data for all 24 hours in a calendar day. The CEM is activated and starts collecting valid data when fires are put in the boiler."*

DES Response

DES deleted Table 5 because these emission limitations are already included in the permit. With the deletion of these provisions, this comment is no longer relevant.

- h. *Comment #6: Condition VIII.B.1., Table 5, Item 5 PSNH requests a footnote be added to the TSP/PM10 limits for MK1 and MK2 providing the calculation for the tons per consecutive 12-month period limitation.*

DES Response

DES deleted Table 5 because these emission limitations are already included in Table 6. With the deletion of these provisions, this comment is no longer relevant.

- i. Comment #7: *Condition VIII.B.2., Table 6, Items 4., 5., 17., 19., and 30., Footnotes 10.-13., 16., 17., and 20. – Consistent with the language contained in the “Applicable Requirement”, the footnotes should be revised to refer to fuel consumption “rates” rather than “limits”. This revision should also be made in the Engineering Summary.*

DES Response

DES changed “limits” to “rates” in the Title V Operating Permit and the Engineering Summary, because the fuel consumption rates are calculated based on the maximum design capacity of the boiler (in mmBtu/hr) and the heating value of the fuel (in Btu/gal or Btu/lb). If the heating value of the fuel varies, then the fuel consumption rate will change accordingly. Note that the consumption rates in Table 6, Item 30 and Footnote 20 of the Draft Title V Operating Permit are limits necessary for compliance with the NAAQS.

- j. Comment #8: *Condition VIII.B.2., Table 6, Item 8. and Footnote 14. – The description of flyash reinjection system and the footnote should be added to the Facility Description contained in Condition I. and removed from Table 6 as an applicable requirement.*

DES Response

DES moved this description from Table 6 to Condition I, because no limitations are associated with this condition.

- k. Comment #9: *Condition VIII.B.2., Table 6, Item 9. – In addition to the operational limitation specified, this requirement contains recordkeeping (“shall track all....exceedances...”) and reporting (shall...report these deviations...) requirements which more appropriately should be included in Table 11.*

DES Response

DES deleted these provisions because they are duplicative and are already included in the Draft Title V Operating Permit (Table 9, Item 13—monitoring and tracking and Table 20, Item 20—reporting permit deviations).

- l. Comment #10: *Condition VIII.B.2., Table 6, Items 11. and 12., 13. and 14. – In order to simplify the permit, PSNH recommends combining the particulate emissions for each Unit into a separate requirement for each Unit. (See SR Title V Operating Permit Table 6, Item 9.)*

DES Response

For simplicity, DES combined the total suspended particulate matter (TSP) requirements for MK1 into one requirement and for MK2 into one requirement.

- m. Comment #11: *Condition VIII.B.2., Table 6, Items 12. and 14. – PSNH requests a footnote be added to the TSP/PM<sub>10</sub> limits for MK1 and MK2 providing the calculation for the tons per consecutive 12-month period limitation.*

DES Response

To explain the basis of the limitation, DES added the following footnote to the tons per consecutive 12-month period limitation for MK1:

The maximum TSP emission limitation for MK1 of 1,463.1 tons during any consecutive 12-month period is calculated based on the lb/mmBtu limitation pursuant to Env-A 2002.06 (without rounding) multiplied by the maximum design capacity of 1238 mmBtu/hr multiplied by 8760 hours/yr and divided by 2000 lb/ton.

To explain the basis of the limitation, DES added the following footnote to the tons per consecutive 12-month period limitation for MK2:

The maximum TSP emission limitation for MK2 of 3458.6 tons during any consecutive 12-month period is calculated based on the lb/mmBtu limitation pursuant to Env-A 2002.06 (without rounding) multiplied by the maximum design capacity of 3473 mmBtu/hr multiplied by 8760 hours/yr and divided by 2000 lb/ton.

- n. Comment #12: *Condition VIII.B.2., Table 6, Item 15. – As written, the applicable requirement does not concisely communicate the NO<sub>x</sub> emissions limitations currently in effect for MK2. PSNH recommends revising this item to read as follows: “The maximum NO<sub>x</sub> emissions from MK2 shall not exceed (a) 0.86 lb NO<sub>x</sub>/mmBtu heat input on an annual average basis; (b) 15.4 tons per 24-hour calendar day; and 29.1 tons per calendar day when combined with MK1.” The appropriate regulatory cites are Env-A 1211.03(d)(1), Env-A 1211.19, and 40 CFR 76.6(a)(2).*

DES Response

DES clarified the permit by listing NO<sub>x</sub> emission rate limitations in one condition and referencing the more specific NO<sub>x</sub> RACT Order provisions:

The maximum NO<sub>x</sub> emissions from MK2 shall not exceed (a) 0.86 lb NO<sub>x</sub>/mmBtu heat input on an annual average basis pursuant to 40 CFR 76.6(a)(2); (b) 15.4 tons per 24-hour calendar day pursuant to 1211.03(d)(1); and (c) 29.1 tons per calendar day pursuant to RACT Order ARD-97-001 Condition D.1.a.ii issued in accordance with Env-A 1211.18 when combined with MK1 (See Condition VIII, E.1.).

- o. Comment #13: *Condition VIII.B.2., Table 6, new Item – The NO<sub>x</sub> emissions limitations currently in effect for MK1 and the combined NO<sub>x</sub> limitation for MK1 and MK2 are not included as applicable requirements in the table of federally enforceable operational and emissions limitations. A new requirement should be inserted into*

*Table 6 specific to MK1 that reads as follows: "The maximum NOx emissions from MK1 shall not exceed (a) 1.22 lb NOx/mmBtu heat input on a 7-calendar day average basis; (b) 18.1 tons per 24-hour calendar day when MK2 is not in full operation; and 29.1 tons per calendar day when combined with MK2." The appropriate regulatory cite is Env-A 1211.19. A footnote should also be inserted to state "Full operation is defined as a unit operating with the CEM activated collecting valid data for all 24 hours in a calendar day. The CEM is activated and starts collecting valid data when fires are put in the boiler."*

#### DES Response

DES clarified the permit by listing NOx emission rate limitations for MK1 in one condition and referencing the more specific NOx RACT Order provisions:

The maximum NOx emissions from MK1 shall not exceed (a) 1.22 lb NOx/mmBtu heat input on a 7-calendar day average basis pursuant to RACT Order ARD-97-001 Condition D.1.c issued in accordance with Env-A 1211.18 ; (b) 18.1 tons per 24-hour calendar day when MK2 is not in full operation pursuant to RACT Order ARD-97-001 Condition D.1.b issued in accordance with Env-A 1211.18(See Condition VIII, E.2.); and (c) 29.1 tons per calendar day when combined with MK2 pursuant to RACT Order ARD-97-001 Condition D.1.a.ii issued in accordance with Env-A 1211.18 (See Condition VIII, E.1.).

DES also inserted the following footnotes along with these provisions:

- 1) This rolling 7-day average shall be calculated by adding up 7 consecutive 24-hour calendar day averages and dividing the sum by 7. Each 24-hour calendar day average shall be calculated using valid CEM data only. Hours when there are no fires in the boiler and the CEM is not activated shall not be included in the 24-hour calendar day average. The rolling 7-day average shall be calculated using days when there is valid CEM data only. Days when there are no fires in the boiler and the CEM is not activated shall not be included in the 7-day average.
  - 2) Full operation is defined as a unit operating with the CEM activated collecting valid data for all 24 hours in a calendar day. The CEM is activated and starts collecting valid data when fires are put in the boiler.
- p. Comment #14: *Condition VIII.B.2., Table 6, Item 22. and Footnote 18. – The applicable requirement for opacity for the emergency boiler should be revised to specifically include the requirement and exemption, rather than referring to the state regulation containing the exemption. A revision clarifying the requirement will also make the note '(Streamlining opacity requirements.)' and footnote unnecessary.*

#### DES Response

DES clarified this requirement as follows:

A) Pursuant to Env-A 2002.02, the owner or operator shall not cause or allow average opacity in excess of 20% for any continuous 6-minute period except as specified in Condition C) below.

B) Pursuant to 40 CFR 60.43c (c) and (d), no owner or operator shall cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. This opacity standard applies at all times, except during periods of startup, shutdown or malfunction.

C) Pursuant to Env-A 2002.04 (a), for steam generating units subject to 40 CFR 60, no more than one of the following two exemptions shall be taken:

1. During periods of startup, shutdown and malfunction, average opacity shall be allowed to be in excess of 20% for one period of 6 continuous minutes in any 60-minute period; or
2. During periods of normal operation, soot blowing, grate cleaning, and cleaning of fires, average opacity shall be allowed to be in excess of 20% but not more than 27% for one period of 6 continuous minutes in any 60-minute period.

D) Pursuant to Env-A 2002.04 (d), (e), and (f), exceedances of the opacity standard in Env-A 2002 shall not be considered violations if the Owner or Operator demonstrates to DES that such exceedances:

1. Were the result of the adherence to good boiler operating practices which, in the long term, result in the most efficient or safe operation of the boiler;
2. Occurred during periods of cold startup of a boiler over a continuous period of time resulting in efficient heat-up and stabilization of its operation and the expeditious achievement of normal operation of the unit;
3. Occurred during periods of continuous soot blowing of the entire boiler tube section over regular time intervals as determined by the operator and in conformance with good boiler operating practice; or
4. Were the result of the occurrence of an unplanned incident in which the opacity exceedance was beyond the control of the operator and in response to such incident, the operator took appropriate steps in conformance with good boiler operating practice to eliminate the excess opacity as quickly as possible.

With this clarification, the footnote is not necessary; therefore, DES deleted it.

- q. Comment #15: *Condition VIII.B.2., Table 6, Item 23. – Consistent with the requirements for emergency generators contained in Title V Operating Permits issued to Schiller and Newington Stations, the particulate emission rate should be revised to include “based on a 24-hour calendar day.”*

DES Response

For consistency, DES revised the permit to include “based on a 24-hour calendar day.” Note that because the emergency generators operate infrequently, DES typically does not require stack testing, which would consist of three one-hour test runs, to demonstrate compliance with the particulate emission rate, but instead allows PSNH to calculate the particulate matter emission rate based on fuel consumption, AP-42 emission factor, and a DES approved fuel heating value (in Btu/gal).

- r. Comment #16: *Condition VIII.B.2., Table 6, Items 24.A) and B) – The applicable requirement needs to be revised to clarify that the maximum operating rate pertains to each crusher within the primary and secondary coal crushers.*

DES Response

This comment is no longer relevant because DES deleted A) and B) because they are design criteria, not operating limits. See Comment 14. b.

- s. Comment #17: *Condition VIII.B.2., Table 6, Item 24 C) – The language contained in this applicable requirement should refer to Table 6, Items 4. and 5., rather than MK1 and MK2's State Permits to Operate, PO-B-0426 and PO-B-0427.*

DES Response

For clarification, DES revised the permit as follows:

Based on the maximum coal usage allowed in MK1 and MK2's ~~State Permits to Operate, PO-B-0426 and PO-0427~~, the maximum annual coal throughput shall be limited to 1,618,367 tons during any consecutive 12-month period.

- t. Comment #18: *Condition VIII.B.2., Table 6, Item 29. – The inclusion of the maximum heat input rate of the emergency boiler as an operational limitation is not consistent with the operational limitations for the other significant emission units. While the maximum heat input rate of the emergency boiler is appropriately contained in Table 1, it should be omitted from Table 6.*

DES Response

Because the emergency boiler is a temporary boiler, DES made certain assumptions, including the maximum gross heat input rating to determine regulatory applicability. The emergency boiler cannot have a heat input rating greater than 96 mmBtu/hr

because additional and/or different requirements may be applicable. Consequently, the heat input rating is included in Table 6 (of the Draft Title V Operating Permit) to be used as a limitation for determining the size of the boiler.

- u. Comment #19: *Condition VIII.B.2., Table 6, Items 30. and 31. – The permit contains hourly, daily, and consecutive 12-month maximum fuel use consumption rates, currently contained in two separate requirements. These requirements should be clarified and contained in a single requirement, if possible. At a minimum, Item 31. should be revised to read “The maximum fuel consumption during any consecutive 12-month period shall not exceed: (a) 1,405,000 gallons of No. 2 fuel oil, or (b) 2,490,000 gallons of on-road low sulfur diesel oil, or (c) any combination of the above fuels such that emissions do not exceed the significance levels contained in Table 6, Item 36.”*

#### DES Response

To keep similar fuel requirements together, DES combined Items 30 and 31 of the Draft Title V Operating Permit and included the applicable regulatory cite, because the hourly and daily limitations are necessary for compliance with the NAAQS and the annual limitation is necessary for PSD/NSR avoidance. For clarification, DES revised the provision as follows:

A) Pursuant to Env-A 606.04, the owner or operator shall limit the maximum fuel consumption rate of MKEB to the following:

1. For No. 2 fuel oil, 520 gal/hr and 11,760 gal/day; or
2. For on-road low sulfur diesel oil, 701 gal/hr.

B) To avoid NSR/PSD, the owner or operator shall limit the maximum fuel consumption rate of MKEB to the following:

1. For No. 2 fuel oil, 1,405,000 gallons per consecutive 12-month period; or
2. For on-road low sulfur diesel oil, 2,490,000 gallons per consecutive 12-month period; or
3. For any combination of the above fuels, fuel consumption rates such that the emissions do not exceed the significance levels contained in Table 5, Item 33.

- v. Comment #20: *Condition VIII.B.2., Table 6, Item 35 and Footnote 22. – The emergency boiler is allowed to burn either on-road sulfur diesel oil with a sulfur content of 0.05% (see Table 6, Item 35.) or No. 2 fuel oil with a sulfur content of 0.4% (see Table 6, Item 3.). In footnote 22, specific to Item 35, it may be necessary to indicate that the sulfur content requirements have been streamlined, as written it appears to contain a requirement. In order to clarify the requirement, the footnote should be revised consistent with Footnote 9 (see Table 6, Item 3) and “The facility can burn No. 2 fuel oil at less than 0.4% sulfur by weight and pass modeling for SO<sub>2</sub>” should be omitted.*

### DES Response

For clarification, DES revised Footnote 22 of the Draft Title V Operating Permit as follows:

DES has streamlined the sulfur content requirements for on-road low sulfur diesel oil. MKEB is required by 40 CFR 60.42c (d) to use fuel oil with a sulfur content less than 0.5% sulfur by weight. To comply with the SO<sub>2</sub> NAAQS as demonstrated through air dispersion modeling conducted pursuant to Env-A 606.04, the on-road low sulfur diesel oil must have a sulfur content that does not exceed 0.05% sulfur by weight. The 0.05% sulfur by weight limit required by Env-A 606.04 (modeling for SO<sub>2</sub> NAAQS) is more stringent than the 0.5% sulfur by weight required by 40 CFR 60.42c (d). Note that no additional limit on sulfur content beyond that required by Env-A 1604.01(a) (0.4% sulfur by weight) is necessary for compliance with the SO<sub>2</sub> NAAQS for No. 2 fuel oil.

- w. Comment #21: *Condition VIII.B.2., Table 6, Item 36. – PSNH would prefer the hourly and consecutive 12-month emissions limitations for each pollutant be contained in separate requirements consistent with the emissions limitation requirements contained in Table 6 for MK1 and MK2.*

### DES Response

To clarify the applicable requirements, the short-term (hourly) emission limitations for MKEB and the long-term (annual) emission limitations are separated into two different items. The hourly limits are the basis for the NAAQS modeling required pursuant to Env-A 606.04; the annual limits are necessary to avoid PSD/NSR requirements.

- x. Comment #22: *Condition VIII.B.2., Table 6, Item 36, Footnote 24 – The second sentence of the footnote appears to contain a requirement. PSNH suggests that the language “The facility will submit annual emissions for the Emergency Boiler based on these AP-42 emissions factors multiplied by actual fuel use.” be omitted from the footnote.*

### DES Response

To clarify the method for demonstrating compliance with the emission limitations, DES removed the suggested sentence from the footnote and added a monthly monitoring requirement in Table 7 of the Proposed Title V Operating Permit as follows:

PSNH shall monitor and calculate the NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>10</sub>, and VOC emissions (in tons/consecutive 12-month period) by using appropriate AP-42 emission factors and actual fuel consumption.

DES also added a recordkeeping requirement to the monitoring records provision of Table 8 of the Proposed Title V Operating Permit. The reporting requirement is already included under the emissions reporting and emission fees provision.

- y. Comment #23: *Condition VIII.I.1., Table 9, Item 37. – As written, this monitoring requirement/method of compliance also contains recordkeeping requirements (...shall calculate and record...) that more appropriately should be contained in Table 10.*

DES Response

For clarification, DES revised this requirement as follows:

The owner or operator shall conduct stack testing using US EPA Method 20 to determine the NO<sub>x</sub> emissions. The owner or operator shall monitor the NO<sub>x</sub> emissions by calculating the NO<sub>x</sub> emission rate in lb/MMBtu on a 24-hour calendar day average, lb/hr on a 24-hour calendar day average, and tons/consecutive 12-month period using the stack test results and actual operating hours.

In addition, DES added the following associated recordkeeping requirement in the monitoring records provisions in Table 8 of the Proposed Title V Operating Permit:

Daily NO<sub>x</sub> emissions for MKCT1 and MKCT2 in lb/MMBtu and lb/hr, and monthly NO<sub>x</sub> emissions in tons/month and the tons/consecutive 12-month period using the stack test results and operating hours.

- z. Comment #24: *Condition VIII.I.1., Table 9, Item 38. – The requirement as written does not accurately reflect the ammonia slip testing requirements contained in FP-T-0054 and TP-B-0462. The language should be amended, consistent with existing permits and Schiller Station's Title V Operating Permit, to read: "PSNH shall conduct stack testing using a DES-approved method to determine the ammonia slip."*

DES Response

DES did not change this provision, because a NO<sub>x</sub> emission rate must be specified, since there is a direct correlation between the ammonia slip emissions and the NO<sub>x</sub> emissions. Typically, stack tests are conducted under the worst-case scenario, which in this situation would be when the NO<sub>x</sub> emission rate is the lowest and the potential for ammonia slip is expected to be the highest.

- aa. Comment #25: *Condition VIII.I.1., Table 9, Item 39. – As written, the monitoring requirement/method of compliance also contains recordkeeping (...shall keep monthly...records for submittal...) and reporting requirements (Daily records shall be submitted...) that more appropriately should be contained in Tables 10 and 11, respectively. It should be noted that the permit requires daily ammonia consumption be reported quarterly and monthly ammonia consumption be reported annually. See Table 11, Items 6.2k. and 16.*

DES Response

DES clarified that monthly ammonia consumption in addition to the daily consumption must be monitored. Also, DES removed the recordkeeping and reporting requirements from Table 9 of the Draft Title V Operating Permit, and clarified in Table 8, Monitoring Records, of the Proposed Title V Operating Permit that daily and monthly ammonia consumption records must be kept. DES maintained the reporting requirements of Table 9 of the Proposed Title V Operating Permit.

- bb. Comment #26: *Condition VIII.I.1., Table 9, Item 40. – As written, the monitoring requirement does not accurately reflect the current ESP monitoring system. While an alarm system is in place to alert the operator of a field out of service, this monitoring system does not continuously monitor and record fields out of service. PSNH requests the frequency of method be changed to daily, rather than continuously and the method of compliance language be revised to read “The owner or operator shall monitor the total number of fields out of service for each electrostatic precipitator.” This revision also eliminates the recordkeeping and reporting requirements that more appropriately should be in Tables 10 and 11, respectively.*

DES Response

DES deleted the recordkeeping and reporting requirements from Table 9 of the Draft Title V Operating Permit and moved them in the Proposed Title V Operating Permit to Tables 8 and 9, respectively. DES changed the monitoring frequency and recordkeeping requirement to daily.

- cc. Comment #27: *Condition VIII.I.1., Table 9, Item 41. – The requirement to measure and record the inlet gas temperature to each ESP does not accurately reflect the current temperature monitoring system in place or the capabilities of the current monitoring equipment. Currently, PSNH continuously monitors the ESP temperature as measured by the CEMS. PSNH requests the language be changed to coincide with the current monitoring system.*

PSNH clarified this comment in a letter to DES from PSNH dated January 29, 2010. The CEM measures the outlet ESP temperature to ensure that the ESP does not exceed the manufacturer's recommendation for temperature.

DES Response

DES changed the permit to match the current ESP temperature monitoring as follows:

*The owner or operator shall continuously monitor the outlet gas temperature of the ESP using a DES-approved monitoring system to ensure that the ESP does not exceed the manufacturer's recommended temperature.*

- dd. Comment #28: *Condition VIII.I.1., Table 9, Item 42. – PSNH suggests that the reference to Table 10, Item 4 be omitted and the language be revised to be consistent with Item 43.*

DES Response

DES revised this requirement as requested to be consistent with Table 9, Item 43 of the Draft Title V Operating Permit as follows:

PSNH shall conduct testing in accordance with appropriate ASTM test methods or obtain documentation from the fuel supplier to demonstrate compliance with the liquid fuel sulfur content limitations.

- ee. Comment #29: *Condition VIII.I.1., Table 9, Items 48 and 49. – As written, the monitoring requirement also contains recordkeeping and reporting requirements (...shall calculate and record...) that more appropriately should be contained in Tables 10 and 11, respectively.*

DES Response

DES deleted the recordkeeping requirements from Table 9 of the Draft Title V Operating Permit and moved them to Table 8 of the Proposed Title V Operating Permit. In addition, DES clarified the monitoring provision in Table 7 of the Proposed Title V Operating Permit as follows:

The owner or operator shall monitor the TSP emissions by calculating the TSP emission rate in lb/MMBtu on a 24-hour calendar day average and tons/consecutive 12-month period using stack test results and operating hours.

The owner or operator shall monitor the PM<sub>10</sub> emissions by calculating the PM<sub>10</sub> emission rate in tons/consecutive 12-month period using stack test results and operating hours.

- ff. Comment #30: *Condition VIII.I.1., Table 9, Item 50. – The requirement that “A DES representative must be present to observe the testing.” seems unnecessary considering the scope of the required testing is the completion of a MKEB Method 9 Opacity observation. This sentence should be omitted or, at a minimum, replaced with language that would allow the required testing to be done if DES representatives*

*are unable to attend. The frequency should also be revised to accurately reflect the performance testing requirements, more specifically "within 180 days of each initial start-up."*

DES Response

DES added a facility-wide stack testing requirement that includes the general requirements of stack testing, including the provisions about a DES representative observing a stack testing. Since these new conditions include provisions regarding the presence of a DES representative, DES deleted the sentence "A DES representative must be present to observe the testing." The frequency of the testing method was clarified by adding the following: "Prior to the removal of each Emergency Boiler installed." Note that the federal requirement for the emergency boiler specifies that the testing must be conducted within 60 days of achieving maximum production rate or within 180 days of initial start-up. The revised language serves to clarify that each boiler that is installed and operated must be tested regardless of how long the boiler is on-site.

- gg. Comment #31: *Condition VIII.I.1., Table 9, Item 51. – In order to clarify the requirement, consistent with the fuel consumption and fuel flow meter monitoring requirements for other emissions units, PSNH recommends amending this monitoring requirement to clearly state that PSNH is required to (1) monitor or measure fuel oil, in gallons per hour and totalized gallons per day, utilized by MKEB using a fuel flow meter and (2) monitor the accuracy of the fuel flow meter, through calibration or verification, annually. (See Newington Title V Operating Permit, Table 9, Items 30 and 32.)*

DES Response

DES clarified this requirement as follows:

- A) PSNH shall monitor or measure fuel oil consumption of MKEB (in gallons per hour and total gallons per day) using a fuel flow meter.
- B) PSNH shall calibrate or verify the accuracy of the fuel flow meter in accordance with the manufacturers or suppliers recommendation or in a manner approved by DES at a frequency consistent with the manufacturers or suppliers recommendation, but at a minimum annually.

- hh. Comment #32: *Condition VIII.I.1., Table 9, Items 53. and 56. – The mercury monitoring requirements, specifically mercury stack testing requirements, are erroneously included in the draft permit twice.*

DES Response

DES deleted the duplicative requirement and clarified the requirement by changing

STMK3 to MK1 and MK2.

- ii. Comment #33: *Condition VIII.I.1., Table 9, Item 55. – The determination of baseline mercury emissions through stack testing is a requirement going forward. The stack testing required pursuant to RSA 125-O:14,II. was completed during 2007. As such, this monitoring requirement should be deleted from the permit.*

DES Response

DES deleted the stack testing requirement, but added the following requirement:

Pursuant to RSA 125-O:14,II, baseline mercury emissions shall be determined based upon stack testing and DES approval.

- jj. Comment #34: *Condition VIII.I.1., Table 9, Item 57 and Condition VIII.J.1., Table 10, Item 24. – The device column should be revised to omit MK1 to accurately reflect that the requirement to monitor emissions monthly to ensure compliance with 40 CFR 52.21(b)(21) and (33) as a result of correspondence between PSNH and DES, specifically identified in Footnote 29, is only applicable to MK2. Also, PSNH requests a footnote be inserted in the parameter column clarifying that the emissions of SO<sub>2</sub> and NO<sub>x</sub> are monitored by CEMs and CO, PM, and VOCs are calculated using emissions factors and fuel characteristics.*

DES Response

DES corrected the applicable emission unit column to include only MK2, as requested. Also, DES added the requested footnote.

- kk. Comment #35: *Condition VIII.J., Table 10, Item 1. – The record retention requirement should be revised to incorporate the 10 year record retention requirements contained in Env-A 4600 and Table 10, Item 23.*

DES Response

DES changed this record retention requirement as requested to incorporate the 10-year record retention requirement of Env-A 4600.

- ll. Comment #36: *Condition VIII.J., Table 10, Items 4. and 7. – The applicable emission unit should be revised, consistent with Title V Operating Permits issued to Newington and Schiller Stations, to specify MKCT1 , MKCT2, MKEB and MKEG.*

DES Response

DES revised the permit to specify each applicable emission unit. DES included MK1 and MK2 as applicable units, too, because they also burn liquid fuel oil.

- mm. Comment #37: *Condition VIII.J., Table 10, Item 4. – The recordkeeping requirement as written is not consistent with the corresponding requirements for coal or the requirements contained in permits issued to Newington and Schiller Stations. The language should be revised to be identical to the requirements contained in Schiller Title V Operating Permit, Table 10, Item 8. and Newington Title V Operating Permit Table 10, Item 6.*

DES Response

DES changed this requirement to be consistent with the other PSNH Title V Operating permits and the requirement of Env-A 806.05.

- nn. Comment #38: *Condition VIII.J., Table 10, Item 8. – The frequency of the recordkeeping for coal utilization for each crusher system should be monthly, consistent with the frequency of monitoring required for coal throughput of MKPCC and MKSCC (see Table 9, Item 46.). PSNH requests the language “and consecutive 12-month period” be deleted.*

DES Response

The permit contains a coal utilization limit averaged over a consecutive 12-month period (See Condition VIII.B.2., Table 6, Item 24 of the Draft Title V Operating Permit); therefore, the permit must include a recordkeeping frequency requirement of consecutive 12-month period.

- oo. Comment #39: *Condition VIII.J., Table 10, Item 9. – The applicable emission unit should be revised, consistent with Title V Operating Permits issued to Newington and Schiller Stations, to specify MK1, MK2, MKCT1, MKCT2, MKEB and MKEG.*

DES Response

DES revised the permit to specify each applicable emission unit.

- pp. Comment #40: *Condition VIII.J., Table 10, Item 12. – The frequency of recordkeeping should be revised, consistent with Title V Operating Permits issued to Newington and Schiller Stations, to require monthly and annual. In addition, the language contained in the requirement should be revised to replace “consecutive 12-month” with “annual”.*

DES Response

The operating hour recordkeeping requirement for MKEG is monthly and on a consecutive 12-month period to match the operating hour limitation in Table 6, Item 20 of the Draft Title V Operating Permit based on a consecutive 12-month basis. The frequency of the recordkeeping is monthly, and DES added “consecutive 12-month

period” under “Frequency of Recordkeeping.”

- qq. Comment #41: *Condition VIII.J., Table 10, Item 13. – The frequency of the recordkeeping should be “monthly”, rather than “as specified”.*

DES Response

DES modified this condition to clarify that the visible emission observation records are kept monthly and the repair logs are kept for each occurrence of repairs.

- rr. Comment #42: *Condition VIII.J., Table 10, Item 16.E) – This requirement should be revised, consistent with the requested revision to Table 9, Item 41, to “ESP temperature as measured by the CEMS.”*

DES Response

DES revised the permit to be consistent with PSNH’s comment #27:

Outlet temperature of each ESP

- ss. Comment #43: *Condition VIII.J., Table 10, Item 19. – This requirement which requires a certification of the sulfur content of liquid fuel for the Emergency Boiler is duplicative of the requirement contained in Table 10, Item 4. If this duplicative requirement is retained as currently written in the final permit, the frequency of recordkeeping should be revised to “each delivery” rather than “as specified by the rule.”*

DES Response

DES deleted this requirement Table 10, Item 19 of the Draft Title V Operating Permit because it is duplicative with Table 10, Item 4 of the Draft Title V Operating Permit. For MKEB, 40 CFR 60.48c (f)(1) was added to Table 8, Item 4 of the Proposed Title V Operating Permit as an additional regulatory cite.

- tt. Comment #44: *Condition VIII. J., Table 10, Items 20 and 22. – PSNH suggests clarifying this requirement as follows: “The owner or operator shall maintain records of the daily fuel consumption, in gallons per hour and totalized gallons per day.”*

DES Response

DES revised Table 10, Item 20 of the Draft Title V Operating Permit as follows:

On an hourly and daily basis, the owner or operator shall record fuel consumption for each fuel type, in gallons per hour and totalized gallons per day.

DES clarified the frequency as hourly and daily. DES did not make any changes to Table 10, Item 22 of the Draft Title V Operating Permit.

- uu. Comment #45: *Condition VIII.J., Table 10, Item 21. – The frequency of recordkeeping should be clarified rather than referring to the regulation.*

DES Response

DES revised the frequency to “for each occurrence.”

- vv. Comment #46: *Condition VIII.J., Table 10, Item 24. – The frequency of recordkeeping should be “monthly and consecutive 12-month period” and, consistent with Table 9, Item 57, the applicable emission unit should be “MK2”.*

DES Response

As requested, DES revised the frequency to be “monthly and consecutive 12-month period” and the applicable emission unit to be “MK2” only, because this requirement is only applicable to MK2.

- ww. Comment #47: *Condition VIII.J., Table 10, Item 25. – In order to clarify the recordkeeping requirement specific to fields out of service for the ESPs the language should be revised to omit “of monitoring results as specified in Table 9, Item 40 of this permit, including the following.”*

DES Response

DES revised the permit as follows:

The owner or operator shall maintain the following records for each ESP:

- xx. Comment #48: *Condition VIII.K., Table 11, Items 1 through 6. – PSNH requests the requirements be revisited and revised to accurately reflect the appropriate units consistent with the regulatory requirements.*

DES Response

DES kept the requirements applicable to MK1 and MK2 in Table 11, Items 1 through 6 of the Draft Title V Operating Permit. DES also created two new items with the requirements applicable to MKCT1 and MKCT2 as follows:

Notification Requirements

- A) Pursuant to Env-A 3212.09, the permittee shall comply with the notification requirements of Env-A 3212.07 and 40 CFR 75.20(f) for MKCT1 & MKCT2; and  
B) Pursuant to Env-A 3212.11, for MKCT1 & MKCT2, the permittee shall submit written notification to DES only.

Quarterly Reports for MKCT1 and MKCT2

The Permittee shall submit to DES and EPA in electronic format or other format as approved by DES and/or EPA the information as follows:

- A) Pursuant to Env-A 3212.15(b), the owner or operator shall either meet all of the requirements related to 40 CFR 75 related to monitoring and reporting NOx mass emissions during the entire year or submit quarterly only for the periods from the earlier of May 1 or the date and hour that the owner or operator successfully completes all of the recertification tests required in accordance with 40 CFR 75.74 through September 30<sup>th</sup> of each year in accordance with 40 CFR 75.74(b);
- B) Pursuant to Env-A 3212.15(e), the quarterly reports shall be submitted in the manner specified in 40 CFR 75, Subpart H and 40 CFR 75.64;
- C) Pursuant to Env-A 3212.15(g), the quarterly reports shall include all of the data and information required in 40 CFR 75 Subpart H; and
- D) Pursuant to Env-A 3214.02, the owner or operator shall also submit to the NETS administrator NOx emissions in lb/hr for every hour during the control period and cumulative quarterly and seasonal NOx emission data in pounds.

The frequency of the reporting is 30 calendar days after the end of the 2<sup>nd</sup> and 3<sup>rd</sup> calendar quarter for MKCT1 & MKCT2.

- yy. Comment #49: *Condition VIII.K., Table 11, Item 1 and Footnote 32. – PSNH recommends a revision to the footnote to correct the statement “...and requires that the final report be submitted to DES within 30 days of the completion of the testing.” which does not accurately reflect the Part 75 reporting requirements that allow the submittal of RATA reports 30 days following the end of the quarter.*

DES Response

DES revised the footnote as follows:

Env-A 808 requires at least 30 days notification to DES prior to the scheduled date of a CEM certification, Relative Accuracy Test Audit, or Performance Specification Testing and requires that the final report for the CEM certification be submitted 30 days following the end of the quarter, for the RATA be submitted 30 days following the end of the quarter, and for the Performance Specification Testing be submitted 30 days after completion of testing.

- zz. Comment #50: *Condition VIII.K., Table 11, Items 2 and 3. – This requirement appears to be specific to RATA reports, however, Item 2.C) contains a requirement relative to Performance Specification Testing Reports that is also repeated in Item 3.B). PSNH requests that both Items 2 and 3 be clarified. PSNH suggests that “and EPA” be deleted from the RATA notification requirements.*

DES Response

DES revised Table 11, Item 2 of the Draft Title V Operating Permit by deleting Item 2C). As requested, DES deleted EPA from the RATA notification requirements, because PSNH must notify DES only.

- aaa. Comment #51: *Condition VIII.K., Table 11, Items 3.,4., and 5. – In order to clarify that these requirements are specific to CEMS, PSNH suggests amending the language in the reporting requirement to include “CEMS” in the title of each item.*

DES Response

DES revised the titles in Table 11, Items 3, and 4 of the Draft Title V Operating Permit to include CEMS. DES did not change the title of Item 5 of the Draft Title V Operating Permit because it is also applicable to MKCT1 and MKCT2 which do not have CEMS.

- bbb. Comment #52: *Condition VIII.K., Table 11, Item 6. – As written, the permit requires annual reporting of monthly ammonia consumption and quarterly reporting of daily ammonia consumption (see Table 11, Item 16). PSNH requests that the annual reporting requirement be eliminated.*

DES Response

DES did not make any changes because monitoring and reporting of the annual ammonia consumption is important to monitor the effectiveness of the SCR and to verify compliance with the AAL for ammonia.

- ccc. Comment #53: *Condition VIII.K., Table 11, Item 10. – This requirement should be revised, consistent with Schiller and Newington Stations' Title V Operating Permits, to require the reporting of monthly net electrical output.*

DES Response

Env-A 3207.04 (h) requires that both electrical and thermal output be reported; therefore, DES did not revise the permit.

- ddd. Comment #54: *Condition VIII.K., Table 11, Item 13. – The applicable emission unit should be, consistent with Schiller and Newington Title V Operating Permits, MK1 and MK2, rather than “facility wide”.*

DES Response

DES revised the permit to specify the following applicable emission units: MK1, MK2, MKCT1, and MKCT2.

eee. Comment #55: *Condition VIII.K., Table 11, Item 15. – The requirement to submit an annual report of fuel utilization information seems redundant considering fuel data is contained in the quarterly reports required pursuant to Table 11, Items 6., 11., and 13.*

DES Response

DES streamlined the permit by combining the fuel utilization provisions in the Draft Title V Operating Permit in Table 11, Item 15 with Table 11, Item 13. The other provisions in Table 11 of the Draft Title V Operating Permit mentioned by PSNH do not deal with monthly fuel utilization. Note that fuel utilization data reports are required for all combustion devices; therefore, this requirement for other combustion devices was included in the semi-annual monitoring reporting requirement. See Comment #58.

fff. Comment #56: *Condition VIII.K., Table 11, Item 16. – As written, the permit requires annual reporting of monthly ammonia consumption and quarterly reporting of daily ammonia consumption (see Table 11.,Item 6.). PSNH requests that the annual reporting requirement be eliminated.*

DES Response

See Comment #52. DES did not make any changes because monitoring and reporting of the annual ammonia consumption is important to monitor the effectiveness of the SCR and to verify compliance with the AAL.

ggg. Comment #57: *Condition VIII.K., Table 11, Item 16.C) – The inclusion of results of recent stack testing conducted at the facility in the semiannual monitoring report is redundant given the requirement to submit results within 60 days of the completion of testing, contained in Table 11, Item 12. This requirement should be eliminated.*

DES Response

DES deleted this provision because it is redundant.

hhh. Comment #58: *Condition VIII.K., Table 11, Item 18.D) – The requirement to include fuel consumption for MK1 and MK2 in the semiannual monitoring report should be eliminated since it is redundant given the requirement to submit quarterly fuel flow data contained in Table 11, Item 6.*

DES Response

As indicated in the comment, the requirement to report the fuel consumption of MK1 and MK2 is redundant; therefore, DES changed this provision so that duplicative requirements were eliminated. However, pursuant to Env-A 907.01, PSNH is required to submit fuel consumption for all combustion devices; therefore, DES changed this provision to the following:

Fuel consumption for all combustion devices except for MK1 and MK2.

- iii. Comment #59: *Condition VIII.K., Table 11, Item 29. – PSNH requests the reporting requirement be revised, in order to clarify the reporting requirement, as follows: “The owner or operator shall submit semiannual fuel reports to EPA and DES, postmarked within 30 days following the end of the reporting period, including: A) calendar dates covered in the reporting period; B) delivery records of fuel utilized including supplier certifications of sulfur content; and C) a certified statement that the fuel records represent all of the fuel combusted during the reporting period.” PSNH also requests that the frequency of reporting be amended to specify the dates that the semiannual fuel report is due, consistent with Table 11, Item 18.*

DES Response

DES clarified the reporting to semiannually (by July 31<sup>st</sup> and January 31<sup>st</sup> of each calendar year). DES did not make the requested change because the current language as specified in the federal requirements already allows for the use of the fuel supplier certification to demonstrate compliance with the fuel sulfur content. For clarification, DES did revise the provision slightly as follows (as shown in bold or deleted):

The owner or operator shall submit semiannual reports to EPA and DES, postmarked within 30 days following the end of the reporting period, **including**:

- A) Calendar dates covered in the reporting period.
- B) The 30-day average sulfur content (weight percent) **for each fuel type** (No. 2 fuel oil and on-road low sulfur diesel fuel oil) for each 30-day period during the reporting period; reasons for any noncompliance with the emission standards; and description of corrective actions taken.
- C) If fuel supplier certification is used to demonstrate compliance, the fuel supplier certification **must include the name of the fuel supplier, a statement that the fuel oil complies with specifications under the definition of distillate oil for fuel oil no. 2 in 40 CFR 60.41c, and the sulfur content or maximum sulfur content of the no. 2 fuel oil and the on-road low sulfur diesel fuel oil.**
- D) **A certified statement by the responsible official that the fuel supplier certification** represents all of the fuel combusted during the period.

- jjj. Comment #60: *Condition VIII.K., Table 11, Item 30. – The reporting frequency should be amended to “Annually, by June 30<sup>th</sup>”.*

DES Response

DES made the change requested.

- kkk. Comment #61: *Condition VIII.K., Table 11, Item 32. – PSNH suggests amending this requirement to be consistent with similar certifications required in Table 11, Items 21. and 22., including the frequency of reporting which should be “with each submittal” rather than N/A.*

DES Response

DES changed the frequency for this provision as requested. DES also revised this provision as follows:

Certification by the CO<sub>2</sub> Authorized Account Representative

Any submission under the CO<sub>2</sub> budget trading program shall be signed and certified by the CO<sub>2</sub> Authorized Account Representative and shall include the certification statement pursuant to Env-A 4604.01(e).

- lll. Comment #62: *Condition VIII.K., Table 11, Item 33. – The reporting requirement title should be revised to “CO<sub>2</sub> Budget Program Annual Compliance Certification” and the frequency of the reporting should be “Annually, by March 1<sup>st</sup> (following the relevant control period)” similar to the certification requirements for various programs contained in Table 11, Items 24, 25, and 26.*

DES Response

DES made the requested changes to the title and clarified the frequency of reporting as follows:

By March 1 (following the relevant control period), beginning March 1, 2012 and every 3 years thereafter

- mmm. Comment #63: *Condition VIII.K., Table 11, Item 34. – The reporting requirement and applicable emission unit should be revised to accurately reflect that the requirement is only applicable to MK2.*

DES Response

DES revised the permit so that the applicable emission unit for this provision is MK2 only.

#### 14. Comments from Conservation Law Foundation

- a. *Comment #1: The limiting factor(s) on heat input for Merrimack Unit 1 (MK1) and Merrimack Unit 2 (MK2) are unclear. See draft permit at page 7. Heat input is a function of the type of coal burned, its heating value, and the mass introduced to the boiler. A sample of Paso Diablo coal from October 8, 2006, for example had a heating value of 13,242 Btu/lb. At the permitted combustion rates of 48.5 tons/hour for MK1 and 136.2 tons/hour for MK2, this quantity of coal would produce heat inputs of 1,284 MMBtu/hr for MK1 and 3,607 MMBtu/hr for MK2, both of which values exceed the permitted heat input limits of 1,238 MMBtu/hr for MK1 and 3,473 MMBtu/hr for MK2. Similarly, a mina Norte coal sample from January 10, 2006 of 13,178 Btu/lb would also exceed permitted heat input limits.*

*Conversely, a Russian coal sample from July 10, 2006, had a heating value of 11,716 Btu/lb. At permitted combustion rates, that coal would produce a heat input of 1,136 MMBtu/hr for MK1 and 3,198 MMBtu/hr for MK2, below the permitted heat input limits. That scenario raises the question whether the permit allows PSNH to combust greater quantities of the Russian (or similar heat value) coal at MK1 and MK2, up to the heat input limit; it is unclear, therefore, precisely what the permit allows, and what constitutes an enforceable violation of heat input limits. It is clear from the review of the Draft Permit that the heat input limit is the controlling value, so clarity and precision here is particularly important.*

#### DES Response

DES clarified the permit to indicate that the fuel consumption rates listed are rates, not limits. The fuel consumption rates are calculated using an assumed heat input. As indicated in footnote nos. 1 and 2 of the Draft Title V Operating Permit, the fuel consumption rate may vary based on the actual heat input of the fuel burned. Therefore, the commenter is correct in stating that coals with different heat inputs will result in different consumption rates.

Similarly, the heat input rate listed in the permit is the design capacity of the boiler, and is not an actual limit, but instead a descriptive rating. A boiler can operate below the design capacity and for short periods of time, above the design capacity. If the unit exceeds the design characteristics of the unit for an extended period of time, the boiler could be damaged. PSNH's CEM on MK1 and MK2 calculates (and records and reports) the hourly heat input based on Equation F-15 in 40 CFR 75 Appendix F. The heat input calculation is based on the hourly average volumetric flow rate of the exhaust stack gas, a default carbon-based F factor and the hourly concentration of CO<sub>2</sub>. Because the F factor is a default factor, the calculated heat input could be slightly greater/less than design capacity on short-term basis.

The primary reason for including the maximum heat input rate in the permit is to show that the nameplate rating on the boiler matches the rating listed in the permit. The maximum design rating of the units serves multiple purposes, including

- providing a basis for applicability determinations of regulations and for modeling. The maximum gross heat input rates included in the Title V Operating Permit are based on the data provided in the ARD Form 2, Section I, A. Equipment Information for the boiler. The maximum gross heat input rating is from the nameplate rating on the boiler. These heat input ratings on MK1 and MK2 are not operating limitations, but instead are design criteria.
- b. *Comment #2: Assuming DES concludes (and clarifies as necessary) that greater quantities of Russian (or similar heat value) coal could be combusted, so long as the heat input limit was not exceeded, the recordkeeping and reporting required to assess compliance with short-term limits is insufficient. See Draft Permit at page 58, Table 9, Item 46 (requiring monthly monitoring for the quantity of coal received and coal burned); page 67, Table 10, Item 5 (requiring coal delivery records, including percent sulfur and heating value); page 81, Table 11, Item 11 (requiring quarterly reports including monthly summaries of the weight of the coal received and its sulfur content). The Draft Permit includes hourly emission limits. The monthly and quarterly recordkeeping and reporting may be sufficient to ensure that annual limits are not exceeded, but those requirements are not sufficient to assess compliance with short-term requirements. The recordkeeping and monitoring requirements for coal are also inconsistent with those required elsewhere in the Draft Permit; for example, daily monitoring of ammonia and fuel oil consumption are required (not monthly or quarterly).*

#### DES Response

The CEM is used for monitoring, recording and reporting data to demonstrate compliance with short term and long term emission limits for NO<sub>x</sub>, SO<sub>2</sub>, and CO<sub>2</sub>. As mentioned above, the fuel consumption rates are not limits; however, PSNH uses the monthly and annual fuel consumption data to calculate monthly and annual emissions for PM/PM<sub>10</sub>, CO and VOCs.

The monitoring, recordkeeping and reporting requirements associated with coal consumption and delivery are consistent with the averaging times (12-month consecutive period) and any limits that are associated with this data. The permit does not contain any limitations on the amount of coal received. As mentioned above, the fuel consumption rates are not limits, but instead rates. The only limitation on coal throughput is for the crushers, which is a consecutive 12-month period limit. Note that the hourly ratings for the coal crushers are design capacities and not actual limitations. Consequently, DES revised the permit to delete the hourly design ratings of the primary and secondary coal crusher systems from Table 6, Item 24 of the Draft Title V Operating Permit since these design ratings were already included in Table 1 of the Draft Title V Operating Permit. For the monitoring, recordkeeping and reporting associated with the coal throughput limits of the crushers, see Condition VIII, I, Table 9, Item 46; Condition VIII, J, Table 10, Item 8, and Condition VIII, K, Table 11, Item 18 E in the Draft Title V Operating Permit.

- c. *Comment #3: With respect to calculating heat input, the Draft Permit specifies the methods set forth at 40 CFR 75, Appendix F. See Draft Permit at page 43, Table 9, Item 10. There is more than one way to perform this calculation, however. The calculation method depends upon the type of CEM used and whether pollutants are measured on a wet or dry basis. Since Merrimack is required elsewhere to install, certify, operate, and maintain CEMS, presumably, DES already knows which type of CEMS PSNH – Merrimack Station uses. The type of CEMS will dictate whether pollutant measurement is wet or dry, as well as the specific calculation procedure to be followed. Again, to eliminate ambiguity and ensure enforceability, the specific procedure(s) must be referenced in the permit.*

DES Response

As stated above, PSNH uses equation F-15 in 40 CFR 75, Appendix F to calculate heat input rate based on stack volumetric flow rate on a wet basis and CO<sub>2</sub> percent on a wet basis. The procedure used to calculate heat input is part of the facility's Monitoring Plan and QA/QC Plan required by Table 10, Item 2 on page 64 in the Draft Title V Operating Permit. For clarity, DES revised the permit as follows:

For MK1 and MK2, the owner or operator shall determine the heat input rate (in mmBtu/hr) to each unit for every hour or part of an hour any fuel is combusted following the procedures in 40 CFR 75 Appendix F, Equation F-15 or other method approved by DES.

- d. *Comment #4: Can PSNH change the type of CEMS it operates without first notifying DES? DES should clarify the type of CEMS PSNH is required to operate and confirm that it may not change CEMS without first notifying DES. In that manner, interested parties may know at all times exactly what is required of PSNH.*

DES Response

Anytime that PSNH makes a replacement, modification or change to the CEMs, PSNH must submit an application for recertification of the systems to EPA and DES as indicated in Condition VIII, I, Table 9, Item 30 on page 55 of the Draft Title V Operating Permit. DES needs to approve all CEMS systems, and EPA verifies the software of the CEMs to ensure that the data is calculated and reported properly.

- e. *Comment #5: Several emissions limits set forth in the Draft Permit appear to be unenforceable due to the complicated, and at times duplicative terms, in which they are expressed; others provide hourly emissions limits that are more restrictive than the annual limits. As a result, even at maximum hourly emission rates, over an 8,760 hour year, the annual limit would not be approached. These deficiencies in the Draft Permit would, if not remedied, compromise compliance and enforcement efforts.*

*For example, with respect to Table 6, Item 36 on page 26 of the Draft Permit, it would take 58,309 hours in one year to reach the annual MKEB limit for CO,*

*assuming the maximum hourly rate of 3.43 pounds per hour. Emissions limits for PM10, TSP, and NMVOC follow this same impossible operating pattern where the hourly limits are more restrictive than the annual limit. For clarification and simplicity, the annual limit for CO should be no greater than the product of 8,760 hours and 3.43 pounds per hour (i.e., 30,047 pounds or 15 tons). The limit as currently expressed is ambiguous and opens the door for PSNH – Merrimack Station to argue that CO emissions exceeding 3.43 pounds per hour but totaling fewer than 100 tons per year is not a violation. Clarification is necessary to avoid resource intensive compliance determinations.*

#### DES Response

DES only includes conditions in the permit for which DES has the authority to regulate. Often the regulatory authority for a short term emission limit versus a long term emission limit is different. For example, for the limits referenced in the comment, the basis for the short term emission limits for the emergency boiler (MKEB) is the National Ambient Air Quality Standard (NAAQS) impact modeling analysis (Env-A 606.04), and the basis for the annual limits is NSR/PSD avoidance (Env-A 618 and Env-A 619). DES clarified the permit to indicate the regulatory authority for each limit for the emergency boiler.

- f. *Comment #6: The sulfur limits for MKEB of 520 gal/hr of 0.4% sulfur No. 2 fuel oil or 701 gal/hr of 0.05% sulfur diesel are not comparable. Both limits are expressed by weight; assuming a gallon of diesel weighs the same as a gallon of No. 2 fuel oil, the sulfur limits in diesel fuel are eight times more restrictive than the limits for No. 2 fuel oil. The more restrictive limit should be specified.*

#### DES Response

The fuel consumption rates for the two fuel types are different because the sulfur content limit is different for each fuel type. Because the sulfur content of the on-road low sulfur diesel is low, PSNH can actually operate the emergency boiler at the maximum design capacity (96 mmBtu/hr or 701 gal/hr) assuming the heating value of the on-road low sulfur is 137,000 BTU/gal; however, when the emergency boiler burns No. 2 fuel oil, the fuel consumption must be limited to 520 gal/hr to meet the SO<sub>2</sub> NAAQS.

- g. *Comment #7: Fuel consumption limits for MKCT1 and MKCT2 were imposed to avoid review under PSD provisions of the Clean Air Act. It is unclear, however, how compliance is to be determined for the MKCT1 and MKCT2 hourly limits. The absence of such requirements is inconsistent with requirements provided for other emissions units; for example, a fuel oil meter recording gallons per hour is required to be used for emissions unit MKEB to measure instantaneous oil consumption.*

### DES Response

DES clarified in the permit that the fuel consumption rates for MKCT1 and MKCT2 are based on the maximum design capacity of the turbines and are not actually limits. No fuel consumption limits for MKCT1 and MKCT2 are required for PSD/NSR avoidance purposes. As noted in the response to comment #6 above, the MKEB must monitor the fuel consumption to ensure compliance with the short-term (3-hourly and 24-hour) SO<sub>2</sub> NAAQS. Neither the short-term nor annual fuel consumption of MKCT1 and MKCT2 is limited; therefore, no short-term or continuous fuel consumption monitoring device is necessary. The facility is required to monitor the fuel on a monthly basis and report it quarterly.

- h. Comment #8: *The Draft Permit contains an annual SO<sub>2</sub> "Emissions Cap for Schiller Station, Merrimack Station, and Newington Station Combined," of 55,150 tons. See Draft Permit at page 17, Table 5, Item 2. A review of the Title V Operating Permits issued to the Schiller and Newington Stations reveals that the same 55,150 ton annual SO<sub>2</sub> limit applies to each of those facilities. It appears that the intent of this provision is to provide a fleet-wide annual average limit. However, neither of the existing Schiller or Newington permits nor the Draft Permit includes any reporting and recordkeeping requirements whatsoever to ensure the fleet-wide annual cap is met. As such, those permit terms are completely unenforceable. DES should clarify the manner in which the three facilities must operate to ensure that the 55,150 ton annual SO<sub>2</sub> cap is not exceeded and require appropriate recordkeeping and reporting to enable compliance to be assessed.*

### DES Response

New Hampshire's state acid rain program (Env-A 404.01) caps the combined total annual SO<sub>2</sub> emissions at MK1, MK2 at PSNH Merrimack Station, SR4, SR5, and SR6 at PSNH Schiller Station and NT1 at PSNH Newington Station to 55,150 tons SO<sub>2</sub> per year. Env-A 404.01 allows an owner or operator to combine the total annual emissions from multiple sources under common ownership to demonstrate that the total emissions do not exceed 75% of their baseline emissions for Class A major sources. The recordkeeping and reporting requirements for the state acid rain program pursuant to Env-A 405 reference Env-A 903.03 and Env-A 907.02. These provisions are listed in the Title V Draft Operating Permit in Condition VIII J. Table 9, Item 6 (p.67) and Condition VIII J. Table 11, Item 15 (p. 82). In addition, PSNH submits quarterly emissions reports for each of the three facilities which show the monthly SO<sub>2</sub> emissions for the affected units and the total calendar year SO<sub>2</sub> emissions for each of the three facilities in accordance with Env-A 2910.11 and 40 CFR 75.64(a)(8).

- i. Comment #9: *The Draft Permit's end-of-year reconciliation provisions require PSNH – Merrimack Station to true up SO<sub>2</sub> allowances, ensuring that it has in its allowance account a number of SO<sub>2</sub> allowances equal to or greater than the tons of SO<sub>2</sub> emitted during the prior year. See Draft Permit at page 35, Section F., Item 6.*

*This provision, however, is completely silent on how the true up requirement relates to the fleet-wide SO<sub>2</sub> emissions cap governing Merrimack, Schiller, and Newington Stations. This section should clarify that the true up should take into account banked SO<sub>2</sub> allowances for Schiller and Newington, and in no circumstance should the total allowances for all three facilities equal fewer than the total tons of fleet-wide SO<sub>2</sub> emissions.*

#### DES Response

Env-A 2900, *Multiple Pollutant Annual Budget Trading and Banking Program* and Env-A 400, *Acid Deposition Control Program* are two separate and distinct programs. The acid deposition control program establishes a “hard” (i.e., allowances cannot be used to comply with this limit) SO<sub>2</sub> emissions cap for MK1, MK2 at PSNH Merrimack Station, SR4, SR5, and SR6 at PSNH Schiller Station and NT1 at PSNH Newington Station. The annual SO<sub>2</sub> emissions as measured by the CEMS from these units cannot exceed 55,120 tons per calendar year regardless of the number of banked allowances.

In contrast to Env-A 400, the multiple pollutant annual budget trading and banking program, also referred to as NH’s “Clean Power Act,” is an allowance trading program. MK1, MK2 at PSNH Merrimack Station, SR4 and SR6 at PSNH Schiller Station and NT1 at PSNH Newington Station are allocated SO<sub>2</sub> allowances annually pursuant to Env-A 2906.05. For 2007 and after, these units are given an annual allowance allocation of 7,289 tons. PSNH may bank these allowances, use them or trade them. By January 30 of each year, PSNH must hold sufficient allowances in each individual unit account equal to or greater than the actual SO<sub>2</sub> emissions for the previous calendar year. If PSNH uses banked allowances, the allowances are no longer available for use.

- j. *Comment #10: Similarly, the Draft Permit provisions governing excess SO<sub>2</sub> emissions and enforcement fail to explain how the enforcement mechanism relates to the fleet-wide SO<sub>2</sub> emissions cap governing Merrimack, Schiller, and Newington Stations. That provision requires surrender of three allowances for each ton of excess SO<sub>2</sub> emissions. DES should clarify how the potential availability of fleet-wide allowances would affect PSNH – Merrimack Station’s obligations vis-à-vis the specific 3:1 surrender requirements applicable to PSNH – Merrimack Station.*

#### DES Response

As mentioned above, Env-A 2900, *Multiple Pollutant Annual Budget Trading and Banking Program* and Env-A 400, *Acid Deposition Control Program* are two separate and distinct programs. The acid deposition control program establishes a hard SO<sub>2</sub> emissions cap for MK1, MK2 at PSNH Merrimack Station, SR4, SR5, and SR6 at

PSNH Schiller Station and NT1 at PSNH Newington Station. The annual SO<sub>2</sub> emissions from these units cannot exceed 55,120 tons per calendar year.

The multiple pollutant annual budget trading and banking program, also referred to as NH's "Clean Power Act," is an allowance trading program. The Allowance Tracking System (ATS) Administrator will automatically deduct three allowances for every one ton of excess emissions pursuant to Env-A 2900 as of the allowance transfer deadline of January 30<sup>th</sup>. As long as PSNH holds sufficient allowances as of the allowance transfer deadline, the ATS Administrator will not deduct allowances at a 3:1 ratio. Note that if PSNH's emissions from the applicable sources exceed the 55,120 tons of SO<sub>2</sub> emissions per calendar year cap, then PSNH has violated Env-A 400; PSNH cannot surrender allowances to come into compliance with Env-A 400.

- k. Comment #11: *The Draft Permit incorporates NOx RACT Order No. ARD-98-001, which requires Schiller, Newington, and Merrimack Stations to comply with a combined NOx emissions cap of 8,208 tons for the non-ozone season beginning October 1<sup>st</sup> and ending April 30<sup>th</sup>. See Draft Permit at page 32, Section E., Item 13. The same end-of-year reconciliation and excess emissions enforcement provisions referenced above, see comments #8, 9, and 10, apply with respect to this seasonal NOx emissions cap. DES must (i) include reporting and recordkeeping requirements adequate to ensure that PSNH is complying with the NOx cap; (ii) clarify that the allowance true up for PSNH – Merrimack Station should take into account banked allowances for Schiller and Newington, and in no circumstance should the total allowances for all three facilities equal fewer than the total tons of fleet-wide NOx emissions for the non-ozone season; and (iii) clarify how the potential availability of fleet-wide allowances would affect the excess emissions and enforcement provisions set forth in the Draft Permit.*

#### DES Response

This "cap" of the Multiple Pollutant Budget Trading and Banking Program (Env-A 2900) in Draft Title V Operating Permit Condition VIII.F.2.b), *NOx Allowance Allocation*, which has a maximum of 3,644 tons NOx/year budgeted for all three PSNH plants is more stringent than the cap in the NOx RACT Order noted above. DES added a footnote to such a fact. Env-A 2905.02, *NOx Budget*, establishes the NOx budget to be no more than 3,644 tons including the seasonal NOx allowances allocated to each affected source pursuant to Env-A 3200.

Page 35 of the Draft Title V Operating Permit, Condition VIII.F.6. *End-of Year Reconciliation* states:

PSNH – Merrimack Station shall, no later than January 30<sup>th</sup> of each calendar year, hold respective quantities of SO<sub>2</sub>, NOx, and CO<sub>2</sub> allowances in the PSNH – Merrimack Station's respective ATS accounts equal to or greater than the respective total SO<sub>2</sub>, NOx, and CO<sub>2</sub> emitted from PSNH – Merrimack Station during the previous year.

The Draft Title V Operating Permit also contains enforcement provisions in the Condition VIII.F.7., *Excess Emissions and Enforcement Provisions* (Env-A 2914), which states that if emissions from PSNH – Merrimack Station exceed allowances held in PSNH – Merrimack Station's compliance account or overdraft account for the year as of the allowance transfer deadline (January 30<sup>th</sup> of the following year), the ATS administrator shall automatically deduct allowances from PSNH – Merrimack Station's compliance account or overdraft account for the next year at a rate of three allowances for every one ton of excess emissions.

1. Comment #12: *The terms "normal operation," and "startup, shutdown, breakdown, upset or malfunction," must be defined in the Draft Permit. It is unclear whether "normal operation" means any period that is not "startup, shutdown, breakdown, upset or malfunction," or whether "normal operation" means any period where generating output is greater than 320 MW per hour, or whether the term is intended to have some other meaning. In any event, startup, shutdown, and malfunction emissions should be included with overall facility emissions for compliance purposes.*

#### DES Response

DES uses the terms, "startup, shutdown, and malfunction" in Condition VIII, B. 2, Table 6, Items 9, 26, 34 and Condition VIII, J, Table 10, Item 21 of the Draft Title V Operating Permit. The term - "normal operation" is used in Condition VII. B; Condition VIII. B. Table 6, Items 8 and 9; Condition VIII. J, Table 10, Item 17; Condition XXVIII; and Footnote 34 of the Draft Title V Operating Permit.

These terms are defined in Env-A 100 as follows:

- Env-A 101.114 "Malfunction" means "malfunction" as defined in 40 CFR 60.2, dated July 1, 1995, namely "any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions."
- Env-A 101.170 "Shutdown" means the cessation of operation of any stationary source, area source, or device for any purpose.
- Env-A 101.181 "Startup" means the setting in operation of any stationary source, area source, or device.

Normal operation is not defined in Env-A 100, but is assumed to be the operation of the device when it is not in startup, shutdown or malfunction mode. Because these terms are used as defined in the rules and regulations or as typically defined, DES does not need to define them in the permit.

These provisions in the permit specify how emissions are treated during startup, shutdown and malfunction. Emissions during startup, shutdown, and malfunction are not treated any differently unless they are specifically exempted by a rule or statute.

For emission reporting and emission fee payment purposes, all emissions, including those during startup, shutdown, and malfunction are included.

- m. Comment #13: *The term “full operation,” as it relates to MK2 for purposes of establishing the MK1 NOx limit, is not clearly defined. See Draft Permit at page 17, Table 5. In another section of the Draft Permit, the term “full operation” is defined as “a unit operating with the CEM activated collecting valid data for all 24 hours on a calendar day. The CEM is activated and starts collecting valid data when fires are put in the boiler.” See Draft Permit at pages 30-31 (addressing non-ozone season NOx allowances). DES should clarify that the term “full operation” as used in connection with the NOx emissions limit provided for MK1 is defined in the same manner as that term is defined in the section addressing non-ozone season NOx allowances. That definition would include periods of startup, shutdown or malfunction, since fires would presumably be still in the boiler (unless the source of a malfunction was a flame out condition).*

*Additional requirements in the Draft Permit establish that a valid hour equals a minimum of forty-two minutes of CEM readings in any “calendar hour.” See Draft Permit at page 46, Table 9, Item 16. Other provisions specify that for a twenty-four hour emissions averaging period, eighteen hours of valid data must be collected. See Draft Permit at page 42, Table 9, Item 7. These conditions conflict with the definition of “full operation,” set forth at pages 30-31. It is critically important that DES clarify the meaning of these terms and use them consistently, otherwise, it will not be possible to accurately assess compliance or enforce permit terms. For example, if MK2 collects valid CEMS data for only eighteen hours, is it in “full operation” for purposes of the MK1 NOx emissions limit? How will compliance be monitored and enforced?*

#### DES Response

DES deleted Table 5 of the Draft Title V Operating Permit because these provisions are included elsewhere in the permit. As noted, “Full operation” is defined in Condition VIII., E., 2. (pp. 30-31) of the Draft Title V Operating Permit as “a unit operating with the CEM activated collecting valid data for all 24 hours on a calendar day. The CEM is activated and starts collecting valid data when fires are put in the boiler.” Full operation would include periods of startup, shutdown, and malfunction for this provision as long as the CEM is activated and collecting valid data for all 24 hours on a calendar day.

Table 9, Items 7 and 16 of the Draft Title V Operating Permit are requirements applicable to the CEM systems. Table 9, Item 7 of the Draft Title V Operating Permit tells how many hours of valid data are required for emissions standards that are expressed as a 3-hour average (2 hours of valid data), 4-hour average (3 hours of valid data), 8-hour average (6 hours of valid data), 12-hour average (9 hours of valid data), and 24-hour average (18 hours of valid data). Table 9, Item 16 of the Draft Title V Operating Permit specifies CEM hourly operating requirements and what

constitutes a valid hour of CEM data. A valid hour data must include at least one data point in each fifteen minute quadrant pursuant to 40 CFR 75.10(d) and a minimum of 42 minutes of CEM readings in any calendar hour pursuant to Env-A 808.01(i). If a valid hour of data is not achieved, then the facility is required to use the appropriate data substitution requirements for invalid hours of operating data. (See Table 9, Item 27 of the Draft Title V Operating Permit for Data Availability and Missing Data Substitution Procedures.)

As noted by the commenter, these definitions do conflict. For purposes of the NOx RACT Order NOx emission limits, the definition of full operation as defined in the NOx RACT Order must be followed. That is, full operation is when the CEM is actively collecting data for 24 hours of a calendar day. For all other purposes, a 24-hour average requires only 18 hours of CEM data for valid data.

- n. Comment #14: *The provision regarding CEMS and COMS recertification states that “the Permittee shall recertify the CEMS and COMS and alternative monitoring system whenever the Permittee makes a replacement, modification, or change to the systems or to the facility that could significantly affect the ability of the systems to accurately measure and record the requisite data.” See Draft Permit at page 55, Table 9, Item 30 (emphasis supplied). DES provides no definition of the phrase “significantly affect,” again resulting in an ambiguous and unenforceable permit term. This section also provides a multiplicity of requirements, and the Draft Permit does not adequately identify which are applicable.*

#### DES Response

The term “significantly affect” comes directly from 40 CFR 75 Section 75.20(b); EPA does not specifically define the term. However, EPA issued guidance on this in their document entitled “*Part 75 Emissions Monitoring Policy Manual*” (US EPA, Clean Air Markets Division; October 28, 2003). DES refers to this guidance on recertification and diagnostic test events and the appropriate quality assurance test for each event. See Question 13.21 of the guidance document.

Condition VIII. I, Table 9, Item 30 of the Draft Title V Operating Permit relates to the recertification of the CEM, COM and alternative monitoring system. In this provision, DES streamlined all similar requirements relating to the recertification of the CEM, COM, and alternative monitoring system. This provision to recertify the monitoring systems is applicable as indicated—“whenever the Permittee makes a replacement, modification, or change to the systems or to the facility that could significantly affect the ability of the systems to accurately measure and record the requisite data.”

- o. Comment 15: *With respect to the frequency of method for opacity monitoring/testing, the phrase “as necessary” is too vague to be enforced. See Draft Permit at page 58, Table 9, Item 44. This section should be clearly linked to periods when the COMS is not in operation. The COMS is the specified means by which compliance with visible*

*emissions limits is to be determined. When the COMS is unavailable, visible emissions should be measured by certified personnel in accordance with the provisions of EPA Method 9.*

#### DES Response

Condition VIII.I, Table 9, Item 44 of the Draft Title V Operating Permit contains the monitoring and testing for opacity for the two combustion turbines, the secondary coal crusher, the emergency generator, and the emergency boiler. None of these devices are required to have continuous opacity monitors. The two combustion turbines are not run on a daily basis, but instead serve mainly as load-shaving units. When the combustion turbines operate, trained personnel perform an EPA Method 22 observation of visible emissions from the combustion turbines. If the observer sees noticeable opacity, trained personnel then perform an EPA Method 9 observation of the combustion turbine(s) and take corrective actions until the opacity returns to normal. Similar observations are performed on the emergency boiler and emergency generator. PSNH – Merrimack Station is also required to do a monthly Visible Method 22 observation of the secondary coal crusher. If noticeable opacity is observed, personnel certified to conduct Method 9 observations conduct this test and take corrective actions until the opacity returns to normal.

The requirements to perform the Method 22 were erroneously not included in the Draft Title V Operating Permit. DES added Method 22 to the monitoring table for the combustion turbines and the primary and secondary coal crusher systems. The frequency of the method was also changed to monthly when the device is operating.

- p. *Comment #16: Footnotes 30 and 31 in Section J addressing recordkeeping requirements are confusing and fail to clarify precisely which requirements will apply as between the old and new versions of the rules. See Draft Permit at page 64, notes 30 and 31. DES should clarify with specificity which version of which recordkeeping requirement applies to each emissions limitation, otherwise the ambiguity renders the requirements too vague to be enforced.*

#### DES Response

DES must include the regulatory cites for both the old and the new Env-A 900 because the federally enforceable version (the version that EPA has approved for inclusion in New Hampshire's State Implementation Plan) is the old version. Both the old and the new provisions are applicable. The Draft Title V Operating Permit includes the provisions of both the old and the new rules unless the new version is more stringent or did not exist in the old version, in which case, DES included the new version.

- q. *Comment #17: The monitoring and QA/QC plan requirements for CEMS and COMS are too vague to be enforced. DES should spell out what will constitute "sufficient information" to demonstrate that all unit SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> emissions, and opacity*

are monitored and reported. See Draft Permit at page 64, Table 10, Item 2(A). Similarly, DES should clarify the precise trigger(s) for the requirement to update that plan. See Draft Permit at page 65, Table 10, Item 2(E). The requirement to update “as necessary” is vague and unenforceable.

#### DES Response

“Sufficient information” is the terminology used in 40 CFR 75.53 (a)(2). EPA does not define these terms specifically, but this provision and the others cited specify what information is required for the monitoring plan. For the purpose of streamlining, DES has combined these requirements. For specific details, PSNH must refer to all of the regulatory cites to ensure that all requirements are met.

DES clarified the permit by deleting “as necessary” in Condition VIII. I., Table 10 Item 2E) of the Draft Title V Operating Permit. DES did not provide any additional clarification to the permit regarding the triggers for updating the plan because the permit states that annually the plan should be revised or updated per the provisions in Condition VIII. I., Table 10 Item 2 E) 1) through 6) of the Draft Title V Operating Permit. Finally, PSNH must certify in their annual compliance certification report that the “plan remains the same” if no updates are necessary.

- r. Comment # 19: *DES should require PSNH to record both its potential to emit (“PTE”) NO<sub>x</sub> for the calculation year for each fuel burning device as well as the actual NO<sub>x</sub> emissions for each fuel burning device. See Draft Permit at p. 69, Table 10 Items 9(E) & (F). The term “theoretical potential” is undefined and therefore unenforceable, and PTE is a more appropriate basis for comparison.*

#### DES Response

Condition VIII, J., Table 10, Item 9 E) of the Draft Title V Operating Permit requires PSNH to record the theoretical potential NO<sub>x</sub> emissions and Condition VIII, J., Table 10, Item 9 F) of the Draft Title V Operating Permit requires PSNH to record the actual NO<sub>x</sub> emissions. “Theoretical potential” is the terminology used in Env-A 901.08(c)(5)a., effective 11-15-92 from the SIP-approved regulation. The potential to emit for each fuel burning device is included in the permit application. If a change is made to affect the potential to emit, particularly an increase in PTE, then PSNH must submit an application to modify the permit. Since the PTE will not change, DES does not require the recording or submitting of the PTE. Similarly, the current Env-A 905.02, effective 4-21-07, does not require the recording and submitting of the theoretical potential because it will not change without a permit modification. Because the SIP-approved version of Env-A 900 requires the recording and submitting of the theoretical potential, the Title V Operating Permit includes this provision. Note that “theoretical potential” was defined in the rules and regulations effective at the time.

- s. *Comment # 20: The Draft Permit requires PSNH to retain monitoring records, but fails to specify a period of time for which records must be maintained. See Draft Permit at p. 71., Table 10, Item 16. Contrast this with the requirement to maintain CO<sub>2</sub> Budget Trading Program records for a period of ten years. See Draft Permit at p. 73, Table 10, Item 23. DES must specify how long monitoring records must be maintained by PSNH.*

DES Response

Condition VIII, J, Table 10, Item 1 on p. 64 of the Draft Title V Operating Permit specifies that records required by the permit must be kept for a minimum of 5 years, except for the certificate of representation of the designated representative which must be maintained at the facility at all times. As the commenter noted, Condition VIII, J, Table 10, Item 23 on p. 73 of the Draft Title V Operating Permit requires CO<sub>2</sub> Budget Trading Program records to be retained for a minimum of ten years.

- t. *Comment # 21: As discussed above, the Draft Permit provides seasonal ozone NO<sub>x</sub> limits. The provisions setting out these limits are confusing, referring, for example to I/M requirements that provide for a decrement of 100 tons from the overall emissions caps as long as the I/M program is in effect in NH, and do not incorporate the terms of those requirements. See Draft Permit at p. 33, Section E, Item 14. As a result, the NO<sub>x</sub> limit applicable to PSNH for the 153-day ozone season is too vague to be enforced, and no member of the public can reasonably be expected to understand what that limit is.*

DES Response

DES clarified the permit by adding a footnote stating the following:

This provision has been superceded by Env-A 3200.

The ozone season NO<sub>x</sub> Budget Trading Program provisions of Env-A 3200 are included in Condition VIII, D of the Draft Title V Operating Permit.

- u. *Comment # 22: The method of compliance described in connection with the "General CEM Requirements" is too vague to be enforceable. See Draft Permit at p. 41, Table 9, Item 5(D) ("the CEMS shall meet the most stringent requirements of 40 CFR 75 and Env-A 808(new))." DES must state the precise requirements with which the CEMS must comply. As well, DES must state the precise requirements that apply for purposes of CEM audit requirements. See Draft Permit at p. 42, Table 9, Item 6(D).*

DES Response

The requirements in 40 CFR 75 and Env-A 800 are very complex and detailed requirements. Although DES attempted to streamline these requirements and list (or

reference) the most stringent and applicable requirements, DES would like to ensure that the most stringent requirement of 40 CFR 75 and Env-A 800 is met; therefore, DES retained Condition VIII, I, Table 9, Item 5(D) on p. 41 of the Draft Title V Operating Permit. In addition, by retaining this language, DES ensures that PSNH would be required to meet any changes to 40 CFR 75.

- v. Comment # 23: *The method of compliance for monitoring ozone season NOx emissions does not clearly define when the method must be applied, merely stating “[t]he owner or operator, when required, shall...” See Draft Permit at 41, Table 9, Item 3. DES must state when the owner or operator must apply the compliance method described.*

DES Response

DES clarified the permit by deleting “when required” and changed the frequency of method to “Hourly and at the end of the ozone season.”

- w. Comment # 24: *The method for calculating CO<sub>2</sub> emissions must be specifically identified; the Draft Permit's requirement to “use applicable procedures specified in 40 CFR 75 Appendix G” is not enforceable. See Draft Permit at p. 43, Table 9, Item 9. Additionally, this requirement is unnecessarily confusing since Item 9 also expressly prohibits use of one of the calculation methods identified in Appendix G.*

DES Response

DES did not make any changes to the permit because it is enforceable as stated. In addition, Env-A 4609.02 (a) specifies that equation G-1 in Appendix G of 40 CFR 75 shall not be used to determine CO<sub>2</sub> emissions under Env-A 4609; therefore, DES kept this provision in the permit.

- x. Comment # 25: *The methods required for opacity monitoring are unclear and unenforceable. See Draft Permit at p. 44, Table 9, Item 13 (“As necessary, the owner or operator shall also use US EPA Method 9 to estimate opacity.”). This provision should clearly state that if the COMS—the primary means with which to measure opacity—is not operating, then Method 9 shall be used to determine opacity and provide data during gap periods when COMS data are not available.*

DES Response

DES clarified the permit as follows:

When the COMS does not meet the minimum operating requirements, then the owner or operator shall use US EPA Method 9 to determine opacity.

- y. Comment # 26: *The Draft Permit provides no enforceable requirement to monitor and/or calculate net electrical output. See Draft Permit at [p.] 44, Table 9, Item 14.*

*The regulatory citation to 40 CFR § 75 does not sufficiently specify which of the many sections of § 75 shall apply.*

DES Response

As stated in the Draft Title V Operating Permit, this condition is enforceable, because it specifically references Env-A 2910.02 and Env-A 3207.04. Env-A 2910.02 states that the owner or operator of each affected source must “install all monitoring systems required under this part for monitoring mass emissions, including all system required to monitor emission rate, concentration, heat input, net electrical output, and flow, in accordance with 40 CFR 75.” As indicated, the general reference was based on the rule. DES clarified the citation by referencing the monitoring plan requirement of 40 CFR 75.53. In addition, DES added the cite of Env-A 3705 which specifies the type of equipment to use in monitoring electrical power generation. DES also added “as reported to and publicly available from US Department of Energy, Energy Information Agency” to the method of compliance.

- z. *Comment # 27: Footnote 28 relating to the method of compliance for CEM hourly operating requirements is confusing and the provision and footnote together must identify unambiguously which regulatory requirements apply. Footnote 28 states that 40 CFR § 75 is less stringent than the applicable state requirements and that the most stringent requirements apply. It appears that the federal requirement is therefore irrelevant; DES should clarify.*

DES Response

DES clarified the permit by deleting the footnote, because both valid hour requirements are applicable and not comparable. Both requirements were already listed in the Draft Title V Operating Permit. The CEM could meet one of the valid hours, but not the other. Both the state and federal requirements must be met to be a valid hour.

- aa. *Comment # 28: Multiple hourly operating requirements for COMS are provided. See Draft Permit at p. 47, Table 9, Item 17(B). The specific requirements to measure emissions, and only those, should be set forth in the Draft Permit. Providing choices among alternatives leads to confusion, can create additional labor for both PSNH and the permitting authority, and make compliance determination more difficult.*

DES Response

If the regulation provides alternatives, then the permit must include the alternatives; therefore, DES retained the alternative in Condition VIII, I, Table 9, Item 17(B) of the Draft Title V Operating Permit. Currently, the averaging time for opacity is 6-minute averages. DES clarified the permit as follows for this provision [additions noted in italics]:

- B) The Permittee shall reduce all opacity data to 6-minute averages calculated in accordance with the provisions of 40 CFR 51 Appendix M, except where the SIP or operating permit requires a different averaging period, in which case the State requirement shall satisfy this Acid Rain Program requirement ~~as shown below~~.
- D) Pursuant to Env-A 808.03(b)(2), ~~for units subject to the Env-A 2002.04(b) exemption~~, the COM must total the number of minutes in any 8-hour period where the opacity, as averaged in non-overlapping 6-minute periods, exceeds the applicable opacity standard.
- bb. Comment # 29: *The method of compliance for ammonia slip testing requires PSNH to conduct stack testing at a NOx emissions rate, "as specified by DES, using a DES-approved method to determine the ammonia slip." See Draft Permit at p. 57, Table 9, Item 38. DES must identify the method to be used, and the specifications for stack testing that will apply.*

#### DES Response

The currently approved method by DES to conduct ammonia slip testing is the EPA conditional test method CTM-027. DES anticipates that EPA will either establish CTM-027 as an official test method or will finalize a different test method in the future. In this instance, requiring conditional method CTM-027 in the permit would make it difficult for DES to approve a more accurate test method if one is developed during the permit term.

The appropriate test method is verified during the pre-test meetings and in the stack test protocol; therefore, it is not necessary for DES to include it in the permit. PSNH is required to meet stack testing requirements pursuant to Env-A 802.02, including submitting prior to the stack test, a protocol that includes the operational mode of the process and the test methods to be used. A pre-test meeting is also required. Pursuant to Env-A 802.10, the operating condition during the stack test must either be between 90 and 100 percent, inclusive, of maximum production rate or rated capacity; a production rate at which maximum emissions occur; or at such operating conditions agreed upon during a pre-test meeting conducted. DES clarified these stack testing requirements in accordance with Env-A 802.02 by adding the following provision:

For any compliance stack test, the owner or operating must meet the stack testing requirements of Env-A 802, including but not limited to pre-test meeting, pre-test protocol, pre-test notice, scheduling change notifications, and stack test result submittals.

- cc. Comment # 30: *EPA recently announced that it will soon be issuing a rule that will require the use of best available control technologies ("BACT") for greenhouse gases, including CO<sub>2</sub>, at large facilities, including facilities such as PSNH's Merrimack Station coal-fired power plant. See Exhibit A, September 30, 2009, EPA Press Release. Specifically, the announcement stated:*

*By using the power and authority of the Clean Air Act, we can begin reducing emissions from the nation's largest greenhouse gas emitting facilities without placing an undue burden on the businesses that make up the vast majority of our economy," said EPA Administrator Jackson. "This is a common sense rule that is carefully tailored to apply to only the largest sources – those from sectors responsible for nearly 70 percent of U.S. greenhouse gas emissions sources. This rule allows us to do what the Clean Air Act does best – reduce emissions for better health, drive technology innovation for a better economy, and protect the environment for a better future – all without placing an undue burden on the businesses that make up the better part of our economy. These large facilities would include power plants, refineries, and factories."*

*DES should provide a mechanism to ensure that the CO<sub>2</sub> BACT requirement is incorporated into PSNH's Title V Operating Permit for Merrimack on an expedited basis once issued.*

#### DES Response

The commenter is referring to a rule announced by EPA on September 30, 2009 that would regulate greenhouse gas emissions from large new or modified facilities. As proposed on October 27, 2009 [74 FR 55292-55365], sources with greenhouse gas emissions in excess of 25,000 tons per year (such as PSNH Merrimack Station) would be classified as an existing major source under the federal Prevention of Significant Deterioration (PSD) permitting program. Among the items on which EPA solicited comment was a proposed major source threshold of 25,000 tons per year and a major modification threshold of 10,000 to 25,000 tons per year.

Notwithstanding the fact that EPA has not yet finalized the PSD program applicability thresholds for greenhouse gas emissions, PSNH Merrimack Station would not trigger PSD requirements (including the requirement to install Best Available Control Technology, or BACT for greenhouse gas emissions) unless the source makes a major modification as defined in the PSD regulations. This is the case with the existing PSD program and would also be the case under the proposed rule (EPA makes this clear in the Fact Sheet released with the proposed rule). Further, if PSNH does make a major modification in the future, the PSD (and BACT) requirements would first be established in a Temporary Permit/PSD Permit before they could be incorporated into a Title V Operating Permit.

- dd. Comment # 31: *The applicable requirements for MK-1 ESP unit operation set forth in the Draft Permit differ significantly from—and are less protective than—those set forth in Temporary Permit FP-T-0054. Compare Draft Permit at p. 20, Table 6, Item 6 with Temporary Permit FP-T-0054 § VII, Air Pollution Control Equipment. DES may not modify the terms of existing permits for purposes of the Title V Operating Permit. Specifically, Temporary Permit FP-T-0054 requires:*

*All sections of the ESP shall be operational at all times that the facility is producing at or above 35 MW gross generation. Based on the 1994 optimization conducted by PSNH, at least 16 of the total 22 sections of the ESP shall be in operation when the device is below 35 MW gross generation.*

*The Draft Permit must reflect the applicable, existing permit terms.*

*DES must require PSNH to provide compliance assurance monitoring ("CAM") plans for the ESPs. See 40 C.F.R. § 64. The CAM rule requires owners and operators to maintain control devices to assure compliance.*

*Additionally, the Draft Permit provisions governing ESP operation must define the term "critical maintenance activities." See Draft Permit at p. 20, Table 6, Item 6; p. 21, Table 6, Item 7. We note as well that, since the ESP is a crucial emissions control device, the notification requirements accompanying these provisions should apply regardless whether DES's offices are open—in light of the availability of e-mail and other forms of communication, there is no reason why PSNH cannot provide notice of an excursion within twenty-four hours of discovery.*

#### DES Response

The language in the Temporary permit was written incorrectly, because ESPs are not designed to operate the way the Temporary Permit was written. The Draft Title V Operating Permit is actually more protective than the Temporary Permit because both ESPs are included in this provision in the Draft Title V Operating Permit.

Pursuant to 40 CFR 64.5 (a)(3), PSNH is not required to submit a compliance assurance monitoring (CAM) Plan until the renewal of the Title V Operating Permit.

In Condition VIII, B. 2, Table 6, Items 6 and 7 of the Draft Title V Operating Permit, DES clarified the permit by deleting "critical" and changed the permit as follows:

All maintenance activities performed and corrective actions taken on the ESP systems shall be recorded and shall be made available for review at the request of DES.

DES only requires the ESP fields out of service notifications during business hours, because DES will only respond during business hours.

- ee. Comment # 32: *The Draft Permit fails to identify all applicable state and federally enforceable operational limitations. See Draft Permit at p. 13, Table 4, Item 9. DES should include the applicable requirements set forth at N.H. Admin. Code Env-A §§ 607.1 and 619 et seq; RSA 125-C:11; and 40 C.F.R. 52.21.*

### DES Response

The comment is somewhat vague in that it does not explain why the requirements of Env-A 607.01 (DES believes the commenter's reference to Env-A 607.1 was a typo), Env-A 619, RSA 125-C:11 and 40 CFR 52.21 should be included in the Title V Operating Permit. However, based on the regulatory citations referenced in the comment, DES believes the commenter is claiming that installing any early mercury emission reduction control technology triggers preconstruction permitting and in particular, the federal Prevention of Significant Deterioration (PSD) preconstruction permitting requirements.

DES disagrees with this comment for two reasons. First, the commenter does not explain how complying with the Early Mercury Emission Reduction Control Technology requirements contained in RSA 125-O has in fact triggered preconstruction permitting review under state permitting rules or the federal PSD program. Second, even if DES agreed with the commenter (that preconstruction permitting review is required for implementing early mercury reductions), any applicable requirements would first need to be established in a Temporary Permit and/or PSD Permit before they could be incorporated into a Title V Operating Permit.

- ff. Comment # 33: *Whenever stack testing is required, the Draft Permit should require PSNH to provide a stack testing plan to DES in advance of testing for the Department's review and approval. The stack test plan should include recording of all operating parameters. A DES representative should have the opportunity to observe all stack tests. Stack tests should also include one run that is conducted under startup, shutdown conditions and/or at different generation rates.*

### DES Response

As noted in response to Comment #29, PSNH is required to meet stack testing requirements pursuant to Env-A 802.02, including submitting prior to the stack test a test protocol that includes a list of operational and process data to be collected. Pursuant to Env-A 802.03(b), DES shall require the rescheduling of any compliance test if DES staff is not available to observe the test. Pursuant to Env-A 802.10, the operating condition during the stack test must either be between 90 and 100 percent, inclusive, of maximum production rate or rated capacity; a production rate at which maximum emissions occur; or at such operating conditions agreed upon during a pre-test meeting. As PSNH Merrimack Station is a base load facility, start-up and shutdowns do not occur very frequently. Stack testing during normal operation is more beneficial in understanding the actual emissions from the unit. If DES deems testing during startup and shutdown conditions or different generation rates as necessary, DES has the authority to require such testing.

As mentioned in the response to comment #29, DES clarified these stack testing requirements in accordance with Env-A 802.02 by adding the following provisions:

For any compliance stack test, the owner or operating must meet the stack testing requirements of Env-A 802, including but not limited to pre-test meeting, pre-test protocol, pre-test notice, scheduling change notifications, and stack test result submittals.

- gg. Comment # 34: *The Emissions Calculation Sheets dated May 15, 2009, state that MK1 and MK2 SO<sub>2</sub> limits are based on 3.645% by weight and AP-42. It is unclear why general and more imprecise AP-42 emission factors are used when both MK1 and MK2 have CEMS and conduct periodic source tests of their emissions. CEMS data should be used to determine SO<sub>2</sub> limits, not AP-42 emission factors.*

#### DES Response

The Emissions Calculation Sheets dated May 15, 2009 show the *potential to emit* (PTE) without taking into consideration any controls or enforceable permit conditions of the devices except as noted. AP-42 emission factors, from US EPA's *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, result in the most conservative estimate of emissions. For PSNH Merrimack Station, AP-42 factors were used to determine these emission estimates, except as noted. If CEM or stack test data is not available, AP-42 factors are also commonly used to calculate a conservative estimate of actual emissions. For MK1 and MK2, the CEMS monitor and record the *actual* controlled emissions of SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub>, and PSNH conducts periodic stack tests to calculate actual PM emissions. The SO<sub>2</sub> emission limits and other emission limits in the permit are based on federal and state regulations and statutes, not potential or actual emission calculations.

- hh. Comment # 35: *The May 15, 2009, Emissions Calculation Sheets also indicate that the MKCT1 and MKCT2 emissions rates for oil are based on emissions associated with the combustion of No. 1 oil. However, in the Draft Permit itself, emissions rates for MK1 and MK2 are based upon emissions associated with the combustion of No. 2 oil. No. 1 oil is analogous to diesel fuel, which typically very low sulfur, and lower sulfur than No. 2 oil. DES should use the same type of oil consistently to calculate emissions factors.*

#### DES Response

MKCT1 and MKCT2 burn either No. 1 fuel oil or JP-4 fuel. MK1 and MK2 primarily burn bituminous coal, but also use No. 2 fuel oil to light off fires before establishing the main coal fires. The potential emissions presented in the Emissions Calculation Sheets dated May 15, 2009 use the appropriate emissions factors to calculate the potential to emit without taking into consideration any controls or permit limitations for each device. Note that the use of No. 2 fuel oil in MK1 and MK2 is very limited; therefore, the coal emission factors represent the maximum potential to emit of MK1 and MK2.

- ii. Comment # 36: *The Draft Permit sets forth several different NOx emissions limits for MK2. See Draft Permit at p. 23, Table 6, Item 15. To facilitate compliance determinations, since PSNH has elected to operate pursuant to option C, the Draft Permit should simply include the relevant limits associated with that option.*

DES Response

DES revised the permit to clarify the currently applicable NOx emission limitations for MK1 and MK2 as follows:

The maximum NOx emissions from MK2 shall not exceed the following:

A) 0.86 lb NOx/mmBtu heat input on an annual average basis pursuant to 40 CFR 76.6(a)(2); B) 15.4 tons per 24-hour calendar day pursuant to 1211.03(d)(1); and C) 29.1 tons per calendar day pursuant to RACT Order ARD-97-001 Condition D.1.a.ii issued in accordance with Env-A 1211.18 when combined with MK1 (See Condition VIII, E.1.).

The maximum NOx emissions from MK1 shall not exceed the following:

A) 1.22 lb NOx/mmBtu heat input on a 7-calendar day average basis<sup>2</sup> pursuant to RACT Order ARD-97-001 Condition D.1.c issued in accordance with Env-A 1211.18; B) 18.1 tons per 24-hour calendar day when MK2 is not in full operation<sup>3</sup> pursuant to RACT Order ARD-97-001 Condition D.1.b issued in accordance with Env-A 1211.18 (See Condition VIII, E.2.); and C) 29.1 tons per calendar day when combined with MK2 pursuant to RACT Order ARD-97-001 Condition D.1.a.ii issued in accordance with Env-A 1211.18 (See Condition VIII, E.1.1).

- jj. Comment # 37: *For purposes of clarity regarding requirements related to stage one and two trigger events for CO<sub>2</sub> budget source use of offset allowances, items (b)(i) and (b)(ii) should both include the following language: "may use offset allowances for up to [5 percent or 10 percent] of its compliance obligation.*

DES Response

The Draft Title V Operating Permit language is identical to Env-A 4605.04; however, RSA 125-O:22, II is more specific. Therefore, DES clarified the permit as follows:

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<sup>2</sup> This rolling 7-day average shall be calculated by adding up 7 consecutive 24-hour calendar day averages and dividing the sum by 7. Each 24-hour calendar day average shall be calculated using valid CEM data only. Hours when there are no fires in the boiler and the CEM is not activated shall not be included in the 24-hour calendar day average. The rolling 7-day average shall be calculated using days when there is valid CEM data only. Days when there are no fires in the boiler and the CEM is not activated shall not be included in the 7-day average.

<sup>3</sup> Full operation is defined as a unit operating with the CEM activated collecting valid data for all 24 hours in a calendar day. The CEM is activated and starts collecting valid data when fires are put in the boiler.

- i. If the Department determines that there has been a stage one trigger event, the CO<sub>2</sub> budget source may use offset allowances for up to 5 percent of its compliance obligation; and
  - ii. If the Department determines that there has been a stage two trigger event, the CO<sub>2</sub> budget source may use offset allowances for up to 10 percent of its compliance obligation.
- kk. Comment # 38: *The Draft Permit notes that MKCT1 and MKCT2 have received approval for use of 40 CFR § 75 Appendix E. See Draft Permit, p. 54, Table 9, Item 29 (A). For clarity, and to improve compliance determination, NOx mass emissions monitoring requirements pertaining to MKCT1 and MKCT2 should be set forth independently with the corresponding applicable alternative compliance method specified. As currently organized, it is unclear whether Item 29 subparts (B), (C), and (D) apply to MKCT1 and MKCT2. There is also a need to more clearly distinguish the requirements applicable to MKCT1 and MKCT2 with respect to methods of compliance for monitoring NOx mass emissions. See Draft Permit, p. 57, Table 9, Item 36.*

DES Response

All of the provisions of Condition VIII, I, Table 9, Item 29 of the Draft Title V Operating Permit are applicable to MK1, MK2, MKCT1, and MKCT2; therefore, DES kept these provisions as shown in the Draft Title V Operating Permit. DES clarified the permit by adding an additional condition that references the alternative emission estimation provision of Appendix E:

The owner or operator shall use the alternative monitoring provisions of 40 CFR 75 Appendix E for determining NOx emissions for MKCT1 and MKCT2. (40 CFR 75 Appendix E)

- ll. Comment # 39: *The Draft Permit provides multiple requirements in connection with methods of compliance for monitoring heat input and NOx emissions at oil-fired peaking units. See Draft Permit at p. 56, Table 9, Item 35. As currently written, this section is confusing and would make it difficult to assess compliance.*

DES Response

These provisions are as stated in 40 CFR 75. 71(d); therefore, DES kept these provisions as shown in the Draft Title V Operating Permit. PSNH has the option of meeting Condition VIII, I Table 9, Item 35 A) or B) of the Draft Title V Operating Permit.

- mm. Comment # 40: *The Draft Permit requires that documentation demonstrating compliance with applicable toxic air emissions regulations “shall be retained at the facility and shall be made available to DES for inspection upon request.” See Draft*

*Permit at p. 13, Table 4, Item 2. PSNH should be required to submit those records to DES where they may be made available for public inspection.*

DES Response

Env-A 1403.03(c) requires documentation of the RTAP compliance demonstration to be kept at the facility and made available for inspection by DES upon request. PSNH's RTAP compliance demonstration is currently on file at DES. If PSNH makes a change that would potentially affect the RTAP compliance demonstration, then PSNH would most likely be required under Env-A 600 to determine if a permit modification is necessary, for which PSNH must submit the information to DES to determine the regulatory applicability. In addition, DES may request a copy of the RTAP compliance demonstration at any time.

- nn. *Comment # 41: The Draft Permit requires PSNH to manage fugitive coal dust emissions using "best management practices" that purportedly are described in PSNH Generation Environmental Management Systems Plan. See Draft Permit at p. 13, Table 4, Item 6. The practices referenced in that document, with which PSNH must comply pursuant to the Draft Permit, must be set forth in the Permit, to ensure that DES, PSNH, and the public understand what PSNH is obligated to do.*

DES Response

DES revised the permit to include the more specific language of the state enforceable only Env-A 1002.04 concerning the fugitive dust control methods as follows:

The Permittee shall prevent, abate, and control fugitive dust emissions, including fugitive coal dust, using best management practices, such as wetting, covering, shielding, or vacuuming.

The applicable regulation and the additional language added to the permit suggest the methods for controlling fugitive dust, but do not prescribe a specific methodology. The permit references the best management practices, but these company-specific policies go beyond that required by the regulation; therefore, the specific language of the best management practices does not need to be included in the permit.

- oo. *Comment # 42: The requirement for calculating baseline mercury emissions does not specify the "appropriate [stack] testing protocols" to be applied, and does nothing to ensure that the coal samples combusted during each stack test will actually be representative of the coal burned at Merrimack Station. As a result, the method for determining baseline emissions is subject to manipulation and is unreliable for purposes of accurately determining baseline mercury emissions. DES should promulgate regulations as necessary to ensure effective implementation of RSA 125-O:14, II.*

### DES Response

PSNH has completed the stack testing to determine the baseline mercury emissions. Prior to conducting the stack tests, PSNH submitted a stack testing protocol and followed the procedures of Env-A 802. DES is reviewing the stack test results and the estimate of the baseline mercury emissions. When DES completes the review, DES will issue a draft determination that will be available on the DES website and will be available for public comment. DES will make a final determination regarding the baseline mercury emissions once all relative public comments have been considered.

DES does not plan to promulgate regulations relating to RSA 125-O:14, II. The statute defines the procedures for implementing these provisions. In addition, at this time, DES is finalizing the review of the baseline mercury emissions data.

### **15. Comments from the New Hampshire Sierra Club and its members.**

a. NHSC commented that pending matters bar the issuance of the Title V Operating Permit. More specifically, NHSC commented that DES should delay the issuance of the Title V Operating Permit for the following reasons:

- NHSC alleges that PSNH made a major modification at PSNH Merrimack with the MK2 turbine project in 2008.
- NHSC claims that DES failed to conduct any permitting process for a major modification, and NHSC has appealed Temporary Permit (TP-008) concerning this matter.
- NHSC served its Notice of Intent to file suit against PSNH for violations of the Clean Air Act.
- The US EPA has made a Section 114 data request to PSNH.

NHSC claims that the outcome of these actions will alter the content of the Title V Operating Permit and trigger more stringent pollution control requirements. NHSC also objects to the final issuance of the Title V Operating Permit until the above items have been resolved.

### DES Response

DES chose not to delay the issuance of the permit any longer. If the Title V Operating Permit needs revision after its issuance, DES will follow the existing procedures to change the Title V Operating Permit. If a Temporary Permit is necessary, DES will first issue a new Temporary (or revise an existing Temporary Permit, if applicable) prior to incorporating the changes into the Title V Operating Permit following the appropriate procedure. If DES can modify the Title V Operating Permit directly, then DES will follow the procedures established in Env-A 612, *Permit Amendments, Modifications, and Revisions*. If a significant modification to

- the Title V Operating Permit is required, the public will be given the requisite review and comment period.
- b. Comment regarding delaying the issuance of the Title V Operating Permit – NH Sierra Club claims that the Title V Operating Permit is 13 years overdue, and DES has failed its responsibility.

DES Response

See Comment No. 1 above.

- c. Comment regarding draft permit conditions regarding mercury emission limitations and monitoring/testing contains impermissible flaws – NHSC claims that the Draft Title V Operating Permit violates the Clean Air Act because it does not include appropriate emissions limitations for the hazardous air pollutant mercury. NHSC claims that the mercury emission limitation in Table 4, Item 8 of the Draft Title V Operating Permit does not comply with the Clean Air Act and consequently, Table 4, Items, 10, 12, 13, and 14 of the Draft Title V Operating Permit are unlawful, vague and unenforceable. In addition, NHSC claims that allowing for early mercury emission reduction credits violates the Clean Air Act.

NHSC also claims that the monitoring/testing provisions of Table 9, Items 53, 54, 55, and 56 of the Draft Title V Operating Permit are unacceptable, vague and unenforceable and should contain a detailed methodology, as they assert that PSNH can manipulate the baseline data.

DES Response

The provisions that NHSC references in the permit are strictly state enforceable conditions pursuant to RSA 125-O:11-18. In accordance with RSA 125-O:16 (c), any early emission reduction credits must exceed the level required by any federal law applicable to the affected source and implemented before July 1, 2013. A final federal mercury rule applicable to PSNH Merrimack has not been promulgated; therefore, the state enforceable mercury conditions do not violate the Clean Air Act. Once a final federal mercury rule is promulgated, PSNH Merrimack will be required to meet the applicable federal requirements in addition to the state law.

Note that in March 2005, the US EPA issued the Clean Air Mercury Rule (CAMR) requiring states to submit plans regarding mercury requirements. On February 8, 2008, the DC Circuit Court vacated CAMR and required the US EPA to develop mercury emission standards pursuant to the Clean Air Act Section 112. EPA has initiated the work to develop mercury emissions standards pursuant to CAA Section 112. EPA negotiated a draft Consent Decree that requires a proposed rule no later than March 16, 2011 and a final rule no later than November 16, 2011.

Regarding monitoring and testing in Condition VIII, I, Table 9, Items 54 and 55 of the Draft Title V Operating Permit, PSNH has completed the testing to determine the baseline mercury input and baseline mercury emissions. Prior to conducting the stack tests to determine the baseline mercury emissions, PSNH submitted a stack testing protocol and followed the procedures of Env-A 802. For the baseline mercury input, RSA 125-O:14, II defines the procedures for implementing these provisions. DES is currently reviewing the test results and the estimate of the baseline mercury emissions and the baseline mercury input. When DES completes its review, DES will issue a draft determination that will be available on the DES website and will be available for public comment. DES will make a final determination regarding the baseline mercury emissions and baseline mercury input once all relative public comments have been considered. Once finalized, the baseline mercury input will be incorporated into the permit

RSA 125-O:15 requires PSNH to use a federally recognized and approved and DES-approved methodology for determining mercury emissions. In accordance with Env-A 802, DES approves the stack testing methodology prior to each test. DES must also approve the use of a CEM meeting the federal specifications when one becomes available. The stack testing protocol details the specific methodology to be used. In addition, the monitoring plan will detail the monitoring methodology.

- d. Comment regarding permit shield– NHSC claims that the permit should expressly state that the permit shield provisions should not apply because of (alleged) violation of the law regarding the “2008 MK2 HP/IP turbine replacement, boiler and the balance of plant equipment project, together with subsequent planned and unplanned maintenance and repair outages, routine or occasioned by the foreign material incident.”

#### DES Response

Permit shield does apply to PSNH Merrimack because they are in compliance with all applicable requirements. Env-A 609.09 specifies the following:

*A permit shield shall state that compliance with the conditions of the title V operating permit will be deemed compliance with any applicable requirement and any state requirement as of the date of permit issuance, provided that:*

- (1) All such applicable requirements and all such state requirements found in Env-A 300 et seq. are specifically identified and included in the title V operating permit;*
- (2) Requirements excluded from the title V operating permit are specifically identified by the department as not applicable to the stationary source or area source; and*
- (3) The title V operating permit includes that determination or a permit condition that incorporates that determination by reference.*

As noted previously, DES evaluated the MK2 turbine project for applicability through the WEPCO provisions of 40 CFR 52.21 (b)(21) and (33), dated July 1, 2002. PSNH must monitor actual emissions from MK2 for at least 5 years (up to 10 years) to

determine compliance with these provisions. These provisions are included in the Draft Title V Operating Permit in Condition VIII, I, Table 9, Item 57; Condition VIII, J, Table 10, Item 24; and Condition VIII, K, Table 11, Item 34.

- e. Comments from NHSC members regarding phasing out the coal plant at PSNH Merrimack.

DES Response

See Comment No. 2 above.

- f. Comments from NHSC members regarding reducing smog levels by reducing NOx emissions at Merrimack Station - Commenters stated that any new permit issued to PSNH should improve the current NOx emission levels and require Best Available Control Technology (BACT) for NOx and all smog-related pollutants.

DES Response

As noted above, the Title V Operating Permit is not the process by which new emission limitations can be established. In addition, BACT requirements are only required for new major sources or major sources making significant modifications. BACT requirements are not currently applicable to Merrimack Station, because the facility is not a new major source and has not undergone any modifications that trigger the New Source Review significance thresholds.

It is important to further clarify this issue with respect to NOx. If Merrimack Station triggers New Source Review requirements for NOx in the future, they will be subject to much more stringent requirements than applying BACT. Merrimack Station would be subject to a more stringent NOx control requirement termed "Lowest Achievable Emission Rate" (LAER). LAER is at least as stringent as BACT because it does not consider the cost of additional NOx controls – if it is technically feasible, the controls must be installed. In addition to requiring LAER, Merrimack Station would be required to obtain 1.2 tons of NOx emission offsets for each ton of increased NOx emissions such that there is a resulting net decrease in NOx emissions.

Over the last fifteen years, the State has imposed emission reduction requirements on PSNH Merrimack Station through the following regulatory programs:

- Multiple Pollutant Reduction Programs (Clean Power Act) - RSA 125-O
  - for sulfur dioxide (SO<sub>2</sub>) (in 2002);
  - for NOx (in 2002);
  - for mercury (Hg) (in 2006); and
  - for carbon dioxide (CO<sub>2</sub>)/Regional Greenhouse Gas Initiative (in 2002/2008)
- Regional Haze Program (40 CFR 51.308) (on-going)
  - for SO<sub>2</sub> (primarily);
  - for NOx; and
  - for particulate matter (PM).

- NOx Reasonably Available Control Technology (RACT) (Env-A 1211)
  - 1996 regulation; and
  - 1997 and 1998 NOx RACT Orders

When all of these programs are fully implemented significant emissions reductions in smog-related pollutants and other pollutants will be achieved at Merrimack Station.

### **Findings of Fact**

DES has based its decision with respect to the application for issuance of the initial Title V Operating Permit for PSNH Merrimack on the following findings of fact:

1. PSNH Merrimack filed an application for its initial Title V Operating Permit on July 1, 1996, in accordance with the requirements of Env-A 609.06, *Application Procedures for Title V Operating Permits*. The application was filed in a timely manner and it was deemed complete.
2. DES conducted a comprehensive review of the permit application and the compliance history of the facility. In addition, DES considered public comments provided during the public hearing and submitted in writing to DES during the public comment period. Based on its review and considerations, DES determined that PSNH Merrimack meets all state and federal air regulations including the National Ambient Air Quality Standards for criteria pollutants and the New Hampshire Ambient Air Limits for all regulated toxic air pollutants.
3. In order to ensure compliance with all applicable requirements, various monitoring, recordkeeping and reporting conditions have been included in the Title V Operating Permit. These include requirements for continuous emissions monitoring systems, continuous opacity monitoring systems, periodic compliance stack tests, and monitoring of operational parameters such as the number of fields out of service in each ESP, ammonia consumption of each SCR system, and outlet gas temperature of each ESP.

In summary, after consideration of comments received during the public comment period, DES has made the additions/revisions as indicated above (excluding minor changes to correct any typographical errors) to the Draft Title V Operating Permit. In addition, DES added the following applicable conditions which had erroneously been omitted in the Draft Title V Operating Permit in Tables 5, 8, and 9 of the Proposed Title V Operating Permit:

Regulatory Cite	Applicable Emission Unit	Applicable Requirement
Env-A 2002.08 (formerly Env-A 1202.07)	MKCT1 & MKCT2	The maximum allowable total suspended particulate matter (TSP) emission rate from each device shall be limited to 0.34 lb/mmBtu. The maximum TSP emission rate is obtained from use of the equation below: $E = 0.880 * I^{-0.166}$ Where: E = maximum allowable particulate matter emission rate in lb/mmBtu; and I = maximum gross heat input rate in mmBtu/hr.
Env-A 2002.08 (formerly Env-A 1202.07)	MKEB	The TSP emission rate from MKEB shall not exceed 0.30 lb/mmBtu.
Env-A 1211.12 NOx RACT	MKEB	The maximum NOx emission rate from MKEB shall not exceed 0.20 lb/mmBtu based on a 24-hour calendar day average.

Recordkeeping Requirement	Frequency of Recordkeeping	Applicable Emission Unit	Regulatory Cite
<p><u>VOC Recordkeeping Requirements</u>                      The owner or operator shall record and maintain the following information at the facility:</p> <p>A) Facility information, including the following:</p> <ol style="list-style-type: none"> <li>1) Source name;</li> <li>2) Source identification;</li> <li>3) Physical address;</li> <li>4) Mailing address;</li> </ol> <p>B) Identification of each VOC emitting device or process except the following:</p> <ol style="list-style-type: none"> <li>1) Processes or devices associated with non-core activities and</li> <li>2) Processes processes or devices emitting exempt VOCs.</li> </ol> <p>C) Operating schedule information for each VOC emitting device/process identified in B) above, including the following:</p> <ol style="list-style-type: none"> <li>1) Days of operation per calendar week during the normal operating schedule;</li> <li>2) Hours of operation per day during normal operating schedule and for a typical high ozone day, if different from the normal operating schedule; and</li> <li>3) Hours of operation per year under normal operating conditions;</li> </ol> <p>D) The following VOC emissions data for each VOC-emitting process/device</p>	Annually and as applicable	MK1, MK2, MKCT1, MKCT2, MKEB, MKEG	Env-A 904.02 (formerly 901.06)

identified in B) above: 1) Annual theoretical potential emissions, in tons per year and during a typical day during the high ozone season of each, in pounds per day; 2) Applicable emission factors, if used to calculate emissions and origin of the emission factors; and 3) Actual emissions from each VOC-emitting device or process identified in B) above, in tons per year and a typical day during the high ozone season in pounds per day.			
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<b>Reporting Requirement</b>	<b>Frequency of Reporting</b>	<b>Applicable Emission Unit</b>	<b>Regulatory Cite</b>
<p><b>VOC Reporting Requirements</b>                      The owner or operator shall submit each the following information:</p> <p>A) Facility information, including the following:                      4) Source name;                      5) Source industrial classification (SIC) code;                      6) Physical address; and                      7) Mailing address;</p> <p>B) Identification of each VOC emitting device or process;</p> <p>C) Operating schedule information for each VOC emitting device, including the following:                      1) A typical business day;                      2) A typical high ozone season day, if different from a typical business day.</p> <p>D) Total quantities of actual VOC emissions from the entire facility and for each device or process including the following:                      1) Annual VOC emissions, in tons; and                      2) Typical high ozone season day VOC emissions, in pounds per day.</p>	Annually (no later than April 15 <sup>th</sup> of the following year	MK1, MK2, MKCT1, MKCT2, MKEG, & MKEB	Env-A 908 (formerly Env-A 901.07)

**Director's Decision**

After consideration of the Title V Operating Permit Application and all public comments, the application is approved and a Proposed Title V Operating Permit is hereby issued.

Pursuant to New Hampshire Revised Statutes Annotated 125-C:12, III and Env-A 622.09, *Appeals*, any person aggrieved by this action may file a petition for appeal with the Air Resources Council which shall be received within 10 days of the date below. Such appeal and 15 copies shall be filed in accordance with the provisions of Env-AC 200, *Procedural Rules* and forwarded to the Chair of the Air Resources Council at the address below:

Air Resources Council  
Attn: Appeals Clerk  
C/o DES, Legal Unit  
29 Hazen Drive, P.O. Box 95  
Concord, NH 03302-0095

If no petition is filed within the 10-day period, this decision will become final.



Robert R. Scott  
Director  
Air Resources Division

15 MAR 10  
Date

cc: Town of Bow  
Public Hearing Attendees/Public Commenters  
Donald Dahl, USEPA Region I