



State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

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Public Service Company of New Hampshire]
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Manchester, NH 03105-0330]

Final RACT Order
ARD-97-001

A. Introduction

This Final RACT Order is issued by the New Hampshire Department of Environmental Services, Air Resources Division, to Public Service Company of New Hampshire, pursuant to RSA 125-C.

B. Parties

1. The New Hampshire Department of Environmental Services, Air Resources Division ("NHDES-ARD"), is a duly constituted administrative agency of the State of New Hampshire having its principal offices at 64 North Main Street, Concord, NH 03302-2033, telephone number (603) 271-1370.
2. Public Service Company of New Hampshire ("PSNH"), is a New Hampshire utility, having a mailing address of P.O. Box 330, Manchester, NH 03105-0330.

C. Statements of Fact and Law

1. PSNH owns and operates Merrimack ("MK") Station located at 97 River Road, Bow, NH, telephone number (603) 224-4081.
2. PSNH filed an initial "Continuous Emissions Monitoring (CEM) System Certification Test" dated December 13, 1993 for Merrimack Unit 1 ("MK1") and Merrimack Unit 2 ("MK2") and periodic certification tests annually, thereafter.
3. Effective May 20, 1994, DES adopted PART Env-A 1211 NITROGEN OXIDES (NOx).
4. PSNH filed a "NOx RACT Compliance Schedule" dated September 13, 1994 for Merrimack Unit 1 ("MK1"), Merrimack Unit 2 ("MK2"), Combustion Turbine 1 ("CT1"), Combustion Turbine 2 ("CT2"), and an emergency generator located at MK Station.
 - a. MK1 is a cyclone fired wet bottom utility boiler, coal fuel, with a net generation capacity of 113.5 MW.

- b. MK2 is a cyclone fired wet bottom utility boiler, coal fuel, with a net generation capacity of 320 MW.
 - c. CT1 is an oil-fired combustion turbine, operated as a load shaving unit, with a net generation capacity of 22 MW.
 - d. CT2 is an oil-fired combustion turbine, operated as a load shaving unit, with a net generation capacity of 22 MW.
 - e. The emergency generator is a diesel (#2 oil) powered internal combustion engine used for emergency purposes only, with a net generation capacity of 350 KW.
5. PSNH originally proposed the following measures as RACT (reasonably available control technology):
- a. Compliance with the requirement in Env-A 1211.03(c)(1)b.1. of maintaining an emission rate from MK1 at or below 0.92 lb/MMBTU based on a 24-hour calendar day average by the installation of Selective Non-Catalytic Reduction (SNCR).
 - b. Compliance with the requirement in Env-A 1211.03(c)(1)b.2. of maintaining an emission rate from MK2 at or below 1.40 lb/MMBTU based on a 24-hour calendar day average and with the requirements in Env-A 1211.03(d) of maintaining emissions from MK2 at or below 35.4 tons/day and 12,921 tons/year during the period May 31, 1995 through May 31, 1999 by the installation of Selective Catalytic Reduction (SCR).
 - c.
 - i. Initial compliance with the requirement in Env-A 1211.13(b) of maintaining emission rates from CT1 and CT2 at or below 0.90 lb/MMBTU based on an hourly average.
 - ii. Based on the results of future periodic testing, future compliance by emissions averaging (if necessary) between MK1, MK2, CT1, and CT2.
 - d. Compliance with Env-A 1211.11 for the emergency generator.

- e. Compliance with the testing requirements in Env-A 1211.21, the monitoring requirements in Env-A 1211.22, and the recordkeeping and reporting requirements in Env-A 901.06 and Env-A 901.07, respectively.
6. By letter dated January 13, 1995, NHDES-ARD responded to PSNH's plan as follows:
- a. NHDES-ARD approved the SNCR system to meet NOx RACT compliance for MK1. However, relative to emissions averaging, NHDES-ARD requested additional information in order to allow NHDES-ARD to draft a single source SIP revision.
 - b. NHDES-ARD approved the SCR system to meet NOx RACT compliance for MK2. However, relative to emissions averaging, NHDES-ARD requested additional information in order to allow NHDES-ARD to draft a single source SIP revision.
 - c. NHDES-ARD approved compliance with the 0.9 lb/MMBTU limit for CT1 and CT2. However, relative to emissions averaging, NHDES-ARD requested additional information in order to allow NHDES-ARD to draft a single source SIP revision.
 - d. NHDES-ARD approved compliance with Env-A 1211.11 for the emergency generator.
 - e. NHDES-ARD approved compliance with the testing requirements in Env-A 1211.21, the monitoring requirements in Env-A 1211.22, and the recordkeeping and reporting requirements in Env-A 901.06 and Env-A 901.07, respectively.
7. PSNH filed an "Emission Test Report" dated May 17, 1995 demonstrating initial compliance with the 0.9 lb/MMBTU limit for CT1 and CT2. The reported tested NOx emission rates were as follows:

<u>Turbine</u>	<u>Average Emission Rate</u> (lb/MMBTU)
CT1	0.678
CT2	0.733

8. PSNH filed revised "Permit Application Forms" dated May 31, 1995 for MK1, a plan for implementation of emissions averaging, and a request for NHDES-ARD's issuance of federally enforceable permits without a single source SIP revision.
9. After extensive discussions between PSNH, NHDES-ARD, and EPA, PSNH filed a letter dated September 27, 1996, requesting a RACT Order (single source SIP revision) for MK.
10. By letter dated October 10, 1996, EPA responded to PSNH's request.

D. Order

Based on the above findings and determinations, DES hereby orders PSNH as follows:

1. Implement the following plan according to the following approved schedule:
 - a.
 - i. Comply, at all times, with an alternative emission limit in terms of a NOx emissions cap of 49.1 tons per calendar day for the combined NOx emissions from MK1 and MK2 during the period May 31, 1995 through May 31, 1999.
 - ii. No later than May 31, 1999, comply with a NOx emissions cap no greater than 29.1 tons per calendar day for the combined NOx emissions from MK1 and MK2. This requirement shall not supersede future requirements for MK2 as listed in Env-A 1211.03(f) and any amendments, thereto.
 - b. When MK2 is not in full operation, comply with a NOx emissions cap of 18.1 tons per calendar day for the NOx emissions from MK1 by May 31, 1995. This cap applies indefinitely into the future, until such time that it is modified or rescinded by NHDES-ARD and approved by EPA as a State Implementation Plan revision. This requirement shall not supersede future requirements for MK1. "Full operation" shall be 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.

- c. Comply with an emission rate limit of 1.22 lb/MMBTU based on a rolling 7-day average for MK1 by May 31, 1995. This emission rate limit applies indefinitely into the future, until such time that it is modified or rescinded by NHDES-ARD and approved by EPA as a State Implementation Plan revision. This requirement shall not supersede future requirements for MK1. 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.
- d. Demonstrate compliance with all of the above alternative emission limits by monitoring the hourly emissions from the MK1 and MK2 in accordance with Env-A 1211.22. "Alternative emission limits" shall be defined as limits other than those listed in Env-A 1211, and the above limits are not alternatives to each other.
- e. Within 30 days following the end of each calendar quarter, report any excess emissions (emissions greater than the above alternative emission limits) which occurred.
- f. Comply with the remainder of the original compliance plan as listed in C.5.b. - C.5.e., above. Once this Order is approved by NHDES-ARD and EPA, D.1.a. - D.1.e., above shall replace and eliminate the requirement stated in C.5.a. of the original plan.
- g. Comply with all of the terms and conditions of this Final RACT Order immediately upon issuance, in accordance with Env-A 1211.19(d), and RACT related conditions of future permits issued by NHDES-ARD, in accordance with Env-A 1211.19(c)(8).

E. Discrete Emissions Reductions ("DERs")

The preamble to the US EPA's proposed Model Open Market Trading Rule or OMTR (60 FR 39668, August 3, 1995) states:

"b. Overcompliance With An Alternative Emission Limit

In many States, sources are given flexibility from RACT requirements when the State grants them an alternative emission limit (AEL) that is less stringent than the RACT standard. The OMTR would not allow sources to generate DER's by reducing emissions below levels required by an AEL but still above levels required by the otherwise applicable RACT standard. Sources subject to AEL's could, however, generate DER's by reducing emissions below the levels associated with the otherwise applicable RACT standard."

1. PSNH shall not be allowed to generate DERs by reducing emissions below levels required by the above AEL, but PSNH shall be allowed to generate DERs by reducing emissions below the emissions limitations and emission rate limitations as listed in Env-A 1211. In the event that PSNH cannot meet the above AEL for some unforeseen reason (e.g., control equipment malfunction), PSNH may use DERs for compliance purposes.
2. This Order grants approval to PSNH to quantify DERs in accordance with the procedures described in the attached protocol. Upon submittal by PSNH of a "Notice of Generation" and accompanying documentation, as described in rule Env-A 3100 which was proposed for adoption on October 10, 1996, PSNH shall be allowed to trade 142 tons of NOx DERs created during the period June 22, 1995 through September 30, 1995 to other sources in New Hampshire in accordance with Env-A 3100. PSNH may be allowed to trade additional tons of NOx DERs created during subsequent periods, upon submittal of additional "Notices of Generation" and accompanying documentation.

Please address any correspondence and communication in reference to this Order to:

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