



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-98-001

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, telephone number (603) 669-4000.

C. Statements of Fact and Law

1. PSNH owns and operates Merrimack ("MK") Station, Bow, NH, Newington ("NT") Station, Newington, NH, and Schiller ("SR") Station, Portsmouth, NH.
2. PSNH filed initial "Continuous Emissions Monitoring (CEM) System Certification Tests" dated December 13, 1993 for Units 1 and 2 ("MK1 & MK2") at MK Station, dated October 10, 1994 for Unit 1 ("NT1") at NT Station, and dated December 23, 1994 for Units 4, 5, and 6 ("SR4, SR5, & SR6") at SR Station, 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 Sections 1-3 for utility boilers MK1, MK2, NT1, SR4, SR5, and SR6, and Section 5 for emissions averaging.

- 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. NT1 is a tangential fired utility boiler, oil or gas fuel, with a net generation capacity of 406 MW.
 - d. SR4, SR5, and SR6 are dry bottom face-fired utility boilers, oil or coal fuel, with net generation capacities of 45, 47, and 48 MW, respectively.
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. Compliance with the requirement in Env-A 1211.03(c)(3)a. of maintaining an emission rate from NT1 at or below 0.35 lb/MMBTU based on a 24-hour calendar day average, when firing exclusively oil, by the installation of waterwall sootblowers, reduction of excess oxygen, and optimization of burners.
 - ii. Compliance with the requirement in Env-A 1211.03(c)(3)c. of maintaining an emission rate from NT1 at or below 0.25 lb/MMBTU based on a 24-hour calendar day average, when firing any combination of oil and gas, by the installation of waterwall sootblowers, reduction of excess oxygen, and optimization of burners.

- d. Compliance with the requirement in Env-A 1211.03(c)(2)b. of maintaining an emission rate from SR4, SR5, and SR6 at or below 0.50 lb/MMBTU based on a 24-hour calendar day average, when firing any combination of oil and coal, by the installation of single loop controllers for improved air-to-fuel ratio, addition of overfire air, optimization of combustion, and burner modifications to achieve staged combustion.
 - e. Compliance with 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.
 - b. NHDES-ARD approved the SCR system to meet NOx RACT compliance for MK2.
 - c. NHDES-ARD approved modifying the boiler to meet NOx RACT compliance for NT1.
 - d. NHDES-ARD approved modifying the boiler to meet NOx RACT compliance for SR4, SR5, and SR6.
 - e. NHDES-ARD approved compliance with 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.
 - f. Relative to emissions averaging, NHDES-ARD requested additional information in order to allow NHDES-ARD to draft a single source SIP revision.
7. 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.
8. 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.

9. By letter dated October 10, 1996, EPA responded to PSNH's request.
10. By RACT Order dated April 14, 1997, NHDES-ARD approved an emissions averaging plan for MK Station.
11. By rule (Env-A 1211.03(f)) effective May 20, 1994, NHDES-ARD required further reductions at MK2 beginning in 1999, namely "the director shall implement Phase II NOx emission limits for wet-bottom cyclone-fired utility boilers subject to Env-A 1211.03(d) no later than May 31, 1999. After that date, wet-bottom cyclone-fired utility boilers shall be limited to the equivalent of the following NOx emission limits:
 - (1) For boilers firing coal, or any combination of fuels utilizing coal, 3.8 to a maximum of 15.4 tons of NOx per 24-hour calendar day, as determined by the director".
12. By rule (Env-A 1211.17) effective May 20, 1994, NHDES-ARD allowed alternative RACT emission limits, other than those specified in Env-A 1211.03 through Env-A 1211.13, provided that an alternative RACT analysis was performed and that a RACT Order was obtained in accordance with Env-A 1211.19.
13. By rule (Env-A 1211.18) effective May 20, 1994, NHDES-ARD allowed emissions averaging, including allowable emissions averaging periods, from 2 or more sources, provided that emissions averaging is enforced by means of federally enforceable conditions issued by NHDES-ARD as a source-specific SIP revision.
14. By Ozone Transport Commission (OTC) Memorandum of Understanding (MOU) dated September 27, 1994, NHDES-ARD agreed to propose regulations, including a regionwide trading mechanism, that require subject sources during the ozone season:
 - a. In the Inner Zone to reduce their rate of NOx emissions by 65% from base year levels by May 1, 1999 or to emit NOx at a rate no greater than 0.20 lb/MMBTU, whichever is less stringent;
 - b. In the Inner and Outer Zones to reduce their rate of NOx emissions by 75% from base year levels by May 1, 2003 or to emit NOx at a rate no greater than 0.15 lb/MMBTU, whichever is less stringent; and

- c. In the Northern Zone to reduce their rate of NOx emissions by 55% from base year levels by May 1, 2003 or to emit NOx at a rate no greater than 0.20 lb/MMBTU, whichever is less stringent.
15. The OTC MOU reduction requirements are generally considered to be more stringent than NHDES-ARD's RACT rule (Env-A 1211) applied to MK1, MK2, NT1, SR4, SR5, and SR6 collectively over the 153-day ozone season.

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. Comply, at all times, with a maximum emission limit for MK2 of 15.4 tons of NOx per 24-hour calendar day by May 31, 1999. Ozone season Discrete Emissions Reductions (DERs) may be used to comply with this limit during the ozone season and non-ozone season DERs may be used during the non-ozone season. Consistent with Env-A 1211.15, unless EPA approves an attainment demonstration for New Hampshire based on Urban Airshed Modelling for New Hampshire's ozone nonattainment areas that does not require additional NOx emission reductions for New Hampshire to attain the NAAQS for ozone, the director may establish and implement lower NOx emission limits by amending this RACT Order in accordance with the RACT Order procedures in Env-A 1211.19.
 - b. Comply, during each 153-day ozone season, with a limit in terms of a seasonal NOx emissions cap of 4,662 tons per calendar season for the combined NOx emissions from MK1, MK2, NT1, SR4, SR5, and SR6 during the 1999 through 2002 ozone seasons in accordance with Env-A 3200 upon adoption. Consistent with the OTC Model NOx Budget Trading Program, compliance may be achieved by allowance trading within the Ozone Transport Region.

- c. Beginning in 1999, comply, during each 212-day non-ozone season beginning on October 1 and ending on April 30, with a limit in terms of a NOx emissions cap of 8,208 tons per non-ozone season for the combined NOx emissions from MK1, MK2, NT1, SR4, SR5, and SR6 during the non-ozone seasons. Ozone season DERs and non-ozone season DERs may be used to comply with this non-ozone season limit. Previously generated (1995 through 1998) DERs may be used. For the purpose of compliance with this RACT Order, DERs may be generated from PSNH's Newington and Schiller Stations, in accordance with the protocol given in section E., below.
- d. Beginning in 2003, comply, during the 153-day ozone season, with an emission limit in terms of a seasonal NOx emissions cap of 3,727 tons minus any tons allocated to new sources and minus 100 tons allocated to a set-aside account dedicated to fulfilling alternative I/M requirements (while such requirements are in effect in New Hampshire) per calendar season for the combined NOx emissions from MK1, MK2, NT1, SR4, SR5, and SR6 during the 2003 and post-2003 ozone seasons in accordance with Env-A 3200 upon adoption. Consistent with the OTC Model NOx Budget Trading Program, compliance may be achieved by allowance trading within the Ozone Transport Region. The specific methodology for allocating allowances among applicable budget sources for 2003 and beyond shall be determined by NHDES-ARD and implemented as an amendment to Env-A 3200 prior to 2003.
- e. Comply with RACT Order ARD-97-001 approved by NHDES-ARD and EPA.
- f. Demonstrate compliance with the alternative emission limits in this RACT Order by monitoring the hourly emissions from the MK1, MK2, NT1, SR4, SR5, and SR6 in accordance with Env-A 1211.22 and Env-A 3200. "Alternative emission limits" shall be defined as limits other than those listed in Env-A 1211 and RACT Order ARD-97-001, and the above limits are not alternatives to each other.
- g. Within 30 days following the end of each calendar quarter, report any excess emissions (emissions greater than the above alternative emission limits) which occurred.

- h. 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 related conditions of future permits issued by NHDES-ARD, in accordance with Env-A 1211.19(c)(8).

E. Creditable Emissions Reductions

1. PSNH shall be allowed to generate discrete emissions reductions, for the purpose of satisfying the requirements of this Order, by reducing emissions below the emissions limitations and emission rate limitations as listed in Env-A 1211 and RACT Order ARD-97-001 and below all other applicable allowable emission rates.
2. This Order grants approval to PSNH to quantify those reductions in accordance with the procedures described in the attached protocol, upon submittal by PSNH of adequate documentation, as described in rule Env-A 3100 which was adopted on January 21, 1997.

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

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