



STATE OF MAINE

Department of Environmental Protection

WILLIAM R. ADAMS, JR. CENTRAL MAINE POWER)
COMMISSIONER W. F. WYMAN STATION)
Cousins Island)
Yarmouth, Maine)

AIR EMISSION LICENSE
Findings of Fact and Order

ADMINISTRATION
259-2811

BUREAUS OF:
AIR QUALITY CONTROL
269-2437
LAND QUALITY CONTROL
289-3762
WATER QUALITY CONTROL
269-2591

MAIN OFFICE:
STATE HOUSE
AUGUSTA 04330

REGIONAL OFFICES:

BANGOR
31 CENTRAL STREET
BANGOR 04401
947-6746

PORTLAND
415 CONGRESS STREET
PORTLAND 04101
775-6587

BRUNSWICK
60 WASHINGTON STREET
BRUNSWICK ISLE 04769
764-3737

After review of the air emission license application, previous applications, records and supporting documents, the Board finds the following facts concerning the air emission license for the Central Maine Power Company's W. F. Wyman electrical generating station, located on Cousins Island, in Yarmouth.

1. The applicant presently maintains an electrical generating facility with three units; numbers 1 and 2 have design capacities of 600 million BTU/hr and #3 has a design capacity of 1132 million BTU/hr. The three units burn #6 oil and are controlled for particulate matter by multiple centrifugal separators rated at 85% efficiency. The applicant also has under construction unit #4 with a design input capacity of 5870 million BTU/hr and will have an electrostatic precipitator with a design efficiency of 95% for particulate control. Units 1, 2 and 3 use a new 320 foot stack and #4 will have a 425 foot stack.

2. These units, along with a 13 million BTU/hr auxiliary boiler and three 7,980,000 gallon residual oil storage tanks, were granted Air Emission License #64A on September 25, 1974.

3. License #64A was granted with standard conditions plus the following special conditions:

e) The licensee shall use oil with sulfur content of 1.5% or less in Units 1-3 after November 1, 1974 unless a variance is granted. In Unit 4, the licensee shall meet the New Source Performance Standards for fossil fuel fired steam generators 40 CFR Part 60 Sub-parts A & D as amended that requires a discharge of particulate matter into the atmosphere of less than 0.1 pound per million BTU heat input, a discharge of sulfur dioxide into the atmosphere of less than 0.8 pounds per million BTU heat input and a discharge of nitrogen oxides into the atmosphere of less than 0.3 pounds per million BTU heat input, expressed as nitrogen dioxide. All standards are maximum 2 hour average.

f) The licensee shall demonstrate, on or before October 30, 1975 that there exists a substantial probability that there will be sufficient oil available to satisfy condition e above by the date unit 4 becomes operational. In the event that the applicant is unable to so demonstrate, the applicant shall be required to provide gas desulfurization for units 1-4 prior to the operation of unit 4 to achieve a reduction of SO₂ emissions at least equivalent

to that of burning conforming oil.

g) The licensee shall provide adequate space for the installation of flue gas desulfurization facilities in the design and construction of unit 4 and the new stack for units 1-3.

h) The licensee shall maintain a comprehensive ambient air monitoring program in these areas likely to be affected by the plant's emissions to measure sulfur dioxide and particulates. Such a program shall include at least continuous automatic ambient air sampling equipment at 3 sites.

i) The licensee shall notify the Bureau of Air Quality Control immediately upon detection of an instantaneous concentration of SO_2 in excess of 1150 ug/m^3 . Further the licensee shall immediately take the necessary steps to preclude absolutely violation of SO_2 ambient air quality standards including discontinuation of operation of one or more units, use of lower sulfur fuels or any other steps necessary to reduce SO_2 emissions.

j) The licensee shall comply with 40 CFR Section 60.45 as amended "Emission and Fuel Monitoring", and 40 CFR Section 60.8 as amended regarding "Performance Tests" except that the performance test shall be observed by a staff member of the Department and a copy of the test data and results shall be forwarded to the Department.

4. The applicant applied for and was granted a variance on December 4, 1974, to the 1.5% sulfur limitation of special condition E. The variance permitted the applicant to burn fuel with a 2.5% sulfur limitation, and was effective for the period ending May 31, 1975, subject to the conditions that the Bureau of Air Quality Control receive a detailed sulfur analysis within 2 weeks of receipt of every oil shipment, that the applicant supply quarterly reports of their ambient air monitoring program, and that the applicant endeavor to maintain a supply of low sulfur oil at the Cape Station.

5. On May 21, 1975 the Board voted and approved Department Regulation 100.6.2 concerning low sulfur fuel. This regulation provided that 1.5% sulfur fuel was needed only in the Portland Peninsular area and that 2.5% sulfur fuel was allowed in the rest of the Portland Air Quality Control Region.

6. Condition F of the Air Emission License and condition 12 of the Site Application 49-0834-05269, both required the licensee to demonstrate a substantial probability of the availability of an adequate supply of conforming low sulfur oil. The licensee provided a statement to the Commissioner with a copy of a letter from Texaco Inc. dated September 24, 1975, to Central Maine Power Company stating that Texaco "fully expected to be able to provide 1.5% sulfur oil for units 1, 2 & 3 and 0.7% sulfur oil for unit #4, subject to government regulations, unforeseen events and mutually satisfactory contract". This statement was discussed at the 12 November 1975 Board meeting and the following action was adopted: "The Central Maine Power Company has submitted

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evidence to comply with provisions of Conditions A-11 and A-12 of the Board's order of 27 February 1974 with regard to the availability of oil".

7. A staff inspection at the site on October 27, 1975, reported that space had been provided for possible flue gas desulfurization equipment per condition "g" and Site Application #49-0834-05269 Condition #12.

8. Staff investigation showed the "comprehensive ambient air monitoring program" specified in condition "h" and in Site Application Condition #15 has been established and operated as specified.

9. Condition "i" specified that the applicant report instantaneous readings of sulfur dioxide in excess of 1150 ug/m^3 . Since the completion of the 320 foot stack for Units 1, 2 and 3, no such reports have been received by the staff, and periodic reports by the applicant reveal no instances where this concentration has been exceeded.

10. The particulate emissions on the attached emission summary sheet show the results of stack testing performed January 30 and 31 and February 1, 1973 on unit 1 operating at full generating capacity, and otherwise represent standard calculations from the most recent technical bulletin of the Environmental Protection Agency, AP - 42 (1976 Supplement). These test results and calculations indicate that Units 1, 2 and 3 are in compliance with the fuel burning equipment particulate emission standard, Title 38, M.R.S.A., section 601 and Air Pollution Control Regulation 100.3. In accordance with Title 38, M.R.S.A., §608, Unit 4 upon start up, must comply with the more stringent New Source Performance Standard of 0.1 pound particulate emission per million BTU input, maximum 2 hour average.

11. The sulfur dioxide emissions on the attached emission summary sheet show straight calculations from fuel sulfur contents of 1.5% and 2.5% for each unit 1, 2 and 3. The New Source Performance Standard applicable to Unit 4 upon start up is 0.80 pounds per million BTU input maximum 2 hour average, or the equivalent of 0.73% to 0.77% sulfur fuel, depending upon the heat value of the fuel, hereinafter referred to as "nominal 0.7% sulfur fuel".

12. State law does not contain an emission standard for nitrogen oxide emissions from Units 1, 2 and 3. Unit 4, upon start up, may not exceed the New Source Performance Standard of 0.3 pounds per million BTU input, maximum 2 hour average.

13. Since completion of the 320 foot stack and while 2.5% sulfur fuel has been used in units 1, 2 and 3, the Bureau of Air Quality Control has operated three continuous monitors and five 24 hour samplers in the Portland area. Also a continuous monitor was operated in Yarmouth during the summer of 1976. Further the licensee has maintained a monitoring network in Yarmouth and Portland. No violations of either the 3 hour or 24 hour Maine Ambient Air Quality Standards have been measured since the low sulfur oil restriction on the Portland Peninsula became effective.

14. Testimony at other hearings before this Board, and the general uncertainty in world petroleum markets, which the Board takes official notice of, makes sole reliance on the use of low sulfur oil to control sulfur dioxide emission a doubtful control technique. Nevertheless, the Board recognizes the present superiority of the use of low sulfur oil over the use of flue gas scrubbers for SO₂ control, due to possible high emission rates during periods of system failure and/or maintenance, and possible pollution from the operation of additional equipment and processes. However, dispersion modeling shows that use of nominal 0.70% sulfur fuel in Unit #4 and 1.5% sulfur fuel in Units 1, 2 and 3 or equivalent flue gas desulfurization will be necessary to maintain the Maine Sulfur Dioxide Ambient Air Quality Standards.

15. Data reported in a May 1976 annual report by the Bureau of Power of the Federal Power Commission shows that 72% of all fuel used in steam-electric power plants in the United States and 91% of all fuel used in such plants in New England in 1975 contained 1.0% sulfur or less. The same report indicates that Maine utilities (3 plants) burned slightly less than 4% of the total amount of fuel burned by steam-electric plants in New England (35 plants) in 1975.

16. The Board finds the source is meeting Best Practical Treatment at this time. However, the Board also recognizes that Best Practical Treatment is an ever evolving concept that may require updating on a case by case basis.

17. The last issued license was due to expire on September 25, 1976. However, to allow input for a Best Practical Treatment policy, the Board extended the license until January 1, 1977.

ORDER

Based upon the above findings, the Board determines and concludes that the Central Maine Power Company has fulfilled all requirements for the reissuance of an air emission license for the W. F. Wyman Station, in that;

1. The use of multiple centrifugal separators for Units 1, 2 and 3, burning fuel of less than 2.5% sulfur content, and the use of an electrostatic precipitator on Unit 4, burning fuel of nominal 0.7% sulfur content or less does not violate existing standards for best practical treatment; and
2. Prior to start up of Unit 4, units 1, 2 and 3, using multiple centrifugal separators and burning oil not exceeding 2.5% sulfur content will not violate applicable Maine Air Emission Standards; and
3. After commencing operation, Unit 4, using an electrostatic precipitator and burning fuel not exceeding nominal 0.7% sulfur content will not violate applicable Maine Air Emission Standards; and

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4. Units 1, 2 and 3, using multiple centrifugal separators and burning oil not exceeding 2.5% sulfur content, will not, either alone or in conjunction with existing emissions, violate the Maine Ambient Air Quality Standards until Unit 4 begins operation; and

5. After start up of Unit 4, using fuel not exceeding 1.5% sulfur content in Units 1, 2 and 3, and fuel not exceeding nominal 0.7% sulfur content in Unit 4, and using the particulate control devices specified for each unit, these sources will not, either alone or in conjunction with existing emissions, violate the Maine Ambient Air Quality Standards.

6. The petroleum industry has added sufficient fuel desulfurization processing capacity, and the demand for low sulfur fuel in New England and the nation is sufficiently high to reasonably assure that the quantities of low sulfur oil which will be necessary to fulfill the terms of this license will be available to the licensee during its term.

Therefore the Board directs the Commissioner to renew air emission license #64A, subject to the standard license conditions plus the following special conditions:

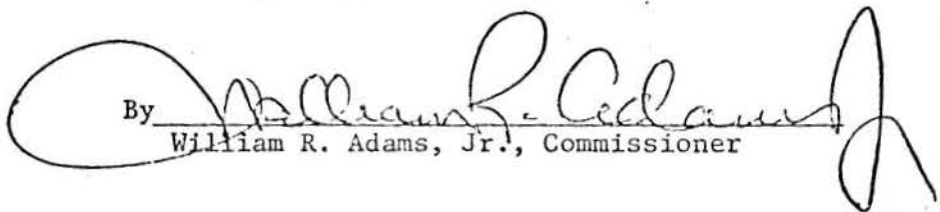
- e) The licensee shall continue to maintain a comprehensive ambient air monitoring program in these areas likely to be affected by the plant's emissions to measure sulfur dioxide and particulates. Such a program shall include continuous automatic ambient air sampling equipment at at least 3 sites.
- f) The space for possible flue gas desulfurization equipment that has been provided for Units 1, 2, 3 and 4 as specified in condition "g" of license #64A and Condition #16 of Site Application Order #49-0834-05269 shall be maintained.
- g) Upon start up of Unit 4, the licensee shall supply to the Bureau of Air Quality Control, on a monthly basis, detailed sulfur analysis of all shipments of oil that are to be used as fuel, including fuel for unit 4.
- h) Upon start up of unit 4, units 1, 2 and 3 shall use fuel with not more than 1.5% sulfur and unit 4 shall use fuel with not more than nominal 0.70% sulfur content. In unit 4 the licensee shall meet the New Source Performance Standards for fossil fuel fired generators, 40 CFR, part 60, sub-parts A and D. This standard requires a discharge of particulate matter into the atmosphere of less than 0.1 pound per million BTU heat input; a discharge of sulfur dioxide into the atmosphere of less than 0.8 pounds per million BTU input; and a discharge of nitrogen oxides into the atmosphere of less than 0.3 pounds per million BTU, expressed as nitrogen dioxide. All standards are maximum 2 hour average.

- 1) The licensee shall comply where applicable with 40 CFR, Section 60.45 as amended "Emission and Fuel Monitoring" and 40 CFR, Section 60.8 as amended regarding "Performance Tests" except that the performance test shall be observed by a staff member of the Department and a copy of the best results shall be forwarded to the Department.
- j) The Board grants this license from January 1, 1977 until September 25, 1978, the date on which the new license would normally expire.

DONE AND DATED IN AUGUSTA, MAINE THIS 29TH DAY OF DECEMBER, 1976.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By


William R. Adams, Jr., Commissioner