NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
(203) 666-6911

February 14, 1985

Docket No. 50-423

B11448

Harold R. Denton, Director
Office of Nuclear Regulatory Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
In Furtherance Certification

In connection with the issuance of pollution control revenue demand bonds by the Connecticut Development Authority and the lending of such proceeds to The Connecticut Light and Power Company and Western Massachusetts Electric Company in order to acquire, construct and install certain pollution control facilities at Millstone Unit No. 3 and at a site adjacent to the plant, we hereby request that the Nuclear Regulatory Commission issue a certificate stating that the facilities listed in the attached Appendix are in furtherance of the abatement and control of pollution for the purposes of any section of the Internal Revenue Code which requires such a certification.

One certificate is requested for each company with respect to all of the above-mentioned facilities. Attached are proposed drafts of the required certification. The present financing schedule necessitates a closing in late March. Therefore, we respectfully request that the certificates be issued by March 14, 1985.

If you anticipate any problems with the proposed time schedule or require any additional information, please contact the undersigned.

Very truly yours,

THE CONNECTICUT LIGHT AND POWER COMPANY,
WESTERN MASSACHUSETTS ELECTRIC COMPANY

W. G. Counsil
Senior Vice President

cc: E. L. Doolittle, NRC Project Manager

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(NRC LETTERHEAD)

Mr. W. G. Counsil
Senior Vice President
The Connecticut Light and Power Company
P. O. Box 270
Hartford, CT 06141-0270

THE CONNECTICUT LIGHT AND POWER COMPANY
Millstone Nuclear Power Station, Unit No. 3
In Furtherance Certification

Dear Mr. Counsil:

Pursuant to the Company's request of February 14, 1985 and in view of the fact that the Company has undertaken to provide certain radiological pollution control facilities at its Millstone Unit No. 3 plant and at a site adjacent to that plant, all as described in the Appendix attached to that request, the Nuclear Regulatory Commission, being the federal agency exercising jurisdiction over such facilities, hereby certifies that such facilities as described in that Appendix are in furtherance of the purpose of abating or controlling atmospheric pollutants or contaminants or water pollution.

For the Nuclear Regulatory Commission

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

JLM/dlr

Dated at Bethesda, Maryland
this ___ day of ___.

(NRC LETTERHEAD)

Mr. W. G. Counsil
Senior Vice President
The Western Massachusetts Electric Company
P. O. Box 270
Hartford, CT 06141-0270

WESTERN MASSACHUSETTS ELECTRIC COMPANY
Millstone Nuclear Power Station, Unit No. 3
In Furtherance Certification

Dear Mr. Counsil

Pursuant to the Company's request of February 14, 1985 and in view of the fact that the Company has undertaken to provide certain radiological pollution control facilities at its Millstone Unit No. 3 plant and at a site adjacent to the plant, all as described in the Appendix attached to that request, the Nuclear Regulatory Commission, being the federal agency exercising jurisdiction over such facilities, hereby certifies that such facilities as described in that Appendix are in furtherance of the purpose of abating or controlling atmospheric pollutants or contaminants or water pollution.

For the Nuclear Regulatory Commission

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

JLM/dlr

Dated at Bethesda, Maryland
this ___ day of ___.

1. Boron Thermal Regeneration System of the Boron Recycle Facility

The Boron Recycle Facility consists of two systems: The Boron Recovery System (previously deemed to be in furtherance of the purpose of abating or controlling water pollution) and the Boron Thermal Regeneration System. These systems reduce the level of radioactivity and boron in reactor coolant letdown during normal operation. Reactor coolant letdown is borated radioactive water released from the primary coolant system.

Together the Boron Recovery System and the Boron Thermal Regeneration System function to remove radioactive contaminants and boron during all normal operating conditions. The Boron Recovery System is used to remove radioactive contaminants and boron at higher concentration as is typical early in each fuel cycle. The Boron Thermal Regeneration System is used to remove boron at lower concentration of 200 ppm or less as is typical late in each fuel cycle. This allows the most efficient means of removing boron under different operating conditions. Since the Boron Recovery System has previously been deemed to be in furtherance of the purpose of abating or controlling water pollution, only the Boron Thermal Regeneration System is described here.

The Boron Thermal Regeneration System includes the following components:

- o Moderating heat exchanger
- o Letdown chiller heat exchanger
- o Thermal regeneration chiller unit (condenser, evaporator, compressor, chiller source tank and pump)
- o Letdown reheat heat exchanger
- o Thermal regeneration demineralizer
- o Related piping, electrical and control equipment

Reactor coolant letdown enters the Boron Thermal Regeneration System at the moderating heat exchanger where its temperature is reduced. The letdown is further cooled in the letdown chiller heat exchanger which is cooled by the Thermal Regeneration chiller unit. Boron is next removed from the letdown in the thermal regeneration demineralizer. Deborated radioactive water is transferred to the radioactive gaseous waste system for degassifying prior to hold up for recycling or disposal.

Once removed by the thermal regeneration demineralizer, boron may be recycled to the reactor coolant system by the letdown reheat heat exchanger. This is a necessary component of the Boron Thermal Regeneration System without which the

radioactive water containing boron would be discharged as radioactive waste. The Boron Thermal Regeneration System is located in the Auxiliary Building. This is a reinforced concrete building located adjacent to the reactor containment.

Operations of the Boron Thermal Regeneration System results in an economic recovery in the form of recycled boron and demineralized water. Boron is expected to be recovered at a rate of 3,762 lbs. per year. The value of this boron is $1,960 per year based on the current market price. Demineralized water is expected to be recovered at a rate of 1,500,000 gallons per year. The value of this water is $9,000 per year based on the cost for the plant to produce demineralized water. Operating and maintenance costs of the Boron Thermal Regeneration System are expected to be $61,609 per year including labor, materials, utilities, insurance and, state and local income taxes.

The Boron Recycle Facility, including the Boron Thermal Regeneration System, controls the release of radioactive reactor coolant letdown to within the ALARA design objectives found at 10 C.F.R. 50, Appendix I. In the absence of these ALARA design objectives, none of this equipment would have been necessary to meet the radioactive protection standards found at 10 C.F.R. 20.

2. Gaseous Waste Degasification System

The Gaseous Waste Degasification System separates radioactive waste gas from primary coolant letdown and gaseous drains. This is necessary to allow treatment of waste gas in the gaseous waste processing system which has been previously deemed to be in furtherance of the purpose of abating or controlling atmospheric pollutants or contaminants. It is also necessary to separate waste gas from reactor coolant letdown prior to treatment in the Boron Recycle Facility.

The Gaseous Waste Degasification System includes the following components:

- o Degasifier recovery exchangers (2)
- o Degasifier feed preheater
- o Degasifier
- o Degasifier condenser
- o Degasifier recirculation pumps (2)
- o Degasifier trim cooler
- o Related piping, electrical and control equipment

Reactor coolant letdown and drainage are mixed and transferred to the gaseous waste degasification system which begins with the two degasifier recovery exchangers. Next the

flow is passed through the degasifier feed preheater and into the degasifier where it is sprayed. The degasifier condenser separates condensables from noncondensable waste gas. Condensables are collected and pumped by the degasifier recirculation pumps through the degasifier recovery exchangers and degasifier trim cooler to the Boron Recycle Facility. Noncondensable waste gas is also collected and is transferred to the gaseous waste processing system for treatment. The Gaseous Waste Degasification System is located in the Auxiliary Building. This is a reinforced concrete building located adjacent to the Reactor Containment.

The Gaseous Waste Degasification System is necessary to the function of both the Gaseous Waste Processing System and the Boron Recycle System. These systems are necessary to control the release of liquid and gaseous radioactive waste to within the ALARA design objectives, none of the Gaseous Waste Degasification System would have been necessary to meet the radiation protection standards found at 10 C.F.R. 20. Operation of the Gaseous Waste Degasification System does not result in an economic benefit.

3. Gaseous Waste (HVAC) System

The Gaseous Waste (HVAC) System processes radioactive waste gases from normal building exhausts prior to their release to the environment. The ventilation systems of all buildings which may become contaminated contain special intake and discharge subsystems. The discharge subsystems contain exhaust ducts, filter banks and exhaust fans. The discharge subsystems are a part of the Gaseous Waste (HVAC) System, while the intake subsystems are not. The discharge subsystems of the following buildings are contained in the Gaseous Waste (HVAC) System: the Waste Disposal Building, the Fuel Building and the Auxiliary Building.

The discharge subsystems are necessary to collect radioactive vapors and atmosphere throughout the buildings. These discharge subsystems transport the radioactive air to the filters for removal of airborne contamination prior to release. Accordingly, the qualified scope of the discharge subsystems includes exhaust ducts that collect and transport contaminated building air to the exhaust filters. This includes exhaust ducts in the Auxiliary and Fuel Buildings and the reactor containment. The Gaseous Waste (HVAC) System also includes dedicated or functionally related ducts, blowers, filter plenems, as well as

associated mechanical, electrical, control, and instrumentation. Major portions of the Gaseous Waste (HVAC) System are located in the Auxiliary Building. This is a reinforced concrete structure adjacent to the Reactor Containment.

The Gaseous Waste (HVAC) System also contains the containment air purge subsystem of the containment building ventilation system. The discharge of this subsystem is used during the normal fuel loading process. During this process, the atmosphere in the containment building is collected, filtered and released to the environment. Normally, the atmosphere of the containment building is not released to the environment.

The atmosphere which is collected and filtered is provided by the supply portion of the containment air purge system. This is a requirement of the reactor containment which is designed as a closed system. Air cannot be collected and purged unless it has been supplied. Equipment associated with the containment air purge supply includes blowers, dampers, containment isolation valves, seismic supported ductwork as well as associated mechanical, electrical, and instrumentation and controls equipment.

The Gaseous Waste (HVAC) System is designed to control the release of radioactive materials to within the design objectives of 10 C.F.R. 50, Appendix I, the ALARA standards. In the absence of ALARA, these gaseous wastes could have been discharged directly to the environment without violating the radiation standards of 10 C.F.R. 20. Normal building ventilation would have been provided by the existing supply air subsystems that pressurize and distribute fresh air throughout the buildings. In accordance with standard industrial practice, a passive exhaust system would have been provided. Such an exhaust system would consist of vents and louvers to allow exhaust air to escape from the building. Internal pressure created by the supply air system would force the building atmosphere out though the passive exhausts. Furthermore, in some cases, the building could have been less tightly sealed more in the fashion of standard industrial buildings.

4. Auxiliary Building

The Auxiliary Building is a four story reinforced concrete building located adjacent to the Reactor Containment. This building encloses equipment used for or related to pollution control, solid waste disposal and other plant functions. Qualified pieces of equipment located in the Auxiliary Building are part of the following systems, which have previously been deemed to be in furtherance of the purpose of abating or controlling atmospheric pollutants or contaminants or water pollution, as the case may be, or shall be so deemed in response to this submission:

- o Gaseous Waste (HVAC) System
- o Gaseous Waste (Process) System
- o Boron Recovery System
- o Boron Thermal Regeneration System
- o Liquid Waste Management

The design and construction of the Auxiliary Building is determined by the special function of the equipment it houses. This is not a standard industrial equipment building. It is a specially designed reinforced and shielded building with approximately 61,776 square feet of space on four levels. A

principal use of the Auxiliary Building is to house parts of these systems. This equipment occupies thirty-five percent of the space used for equipment in the building. In the absence of these systems, the Auxiliary Building would have been a smaller, less expensive structure.

The thirty-five percent portion of the Auxiliary Building dedicated to these systems has been determined by dividing the area used for these systems by the sum of all useful areas in the Auxiliary Building excluding hall space and general service areas. This ratio determines the portion of the Auxiliary Building functionally related and subordinate to these systems. The total cost of the Auxiliary Building to be apportioned includes structural costs and general building support services. Structural costs include excavation, structural steel, form work, reinforcing bar, concrete and epoxy (decontamination) finishes. General building support services include lighting, fire protection, service air, demineralized water, communications and supply air.

5. Low Level Radioactive Solid Waste Storage Facility

The Company plans to build a new facility for storage of low level radioactive solid waste. This will be a 8,400 square foot building with 76,000 cubic feet of storage volume. This is adequate to hold about two years of low level solid waste accumulation generated at the Millstone site. A portion of the building will be used for sorting and compaction of dry radio-active waste. The new building will be completed by November, 1985.

Low level radioactive solid waste to be stored in this facility includes contaminated solidified wastes and dry radio-active waste consisting of contaminated trash, paper, clothing, and other dunage. These wastes are unusable waste having no value. The Company does not expect to sell, or to be able to sell, low level radioactive solid waste at any price.

The new low level solid waste storage facility will be located north of the Warehouse #4 and about 200 feet east of the Millstone Unit #2 transformer yard.

The waste storge facility building will be 120 feet x 70 feet x 18 feet high. It is a pre-engineered metal building with 12" thick interior shielding walls on a poured concrete foundation and slab, at elevation 16.5 MSL. Radiation shielding is provided in the interior walls. A ventilation system is provided to collect and filter exhaust air.

Building drainage is collected in the building sump and drainage through a 4 inch pipe to a buried 6,000 gallon waste collector tank located outside the building. A valve box is provided over the waste collector tank which enclosed a pump, waste sample equipment and related piping and valves.

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