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

General Offices • Seldon Street, Berlin, Connecticut

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

May 31, 1984

Docket No. 50-423
B11206

Harold R. Denton, Director
Office of Nuclear Reactor 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 loaning 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, 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 contemplates a closing in early July, 1984. Therefore, we respectfully request that the certificates be issued by June 21, 1984.

If you contemplate 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

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 May 31, 1984 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 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

Dated at Bethesda, Maryland
this _____ day of ___.

(NRC LETTERHEAD)

Mr. W. G. Counsil
Senior Vice President
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 May 31, 1984 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 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 o: contaminants or water pollution.

For the Nuclear Regulatory Commission

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this _____ day of ___.

May, 1984

Boron Recovery System

The boron recovery system collects and processes reactor coolant letdown during normal plant operation and maintains liquid radiological levels within 10CFR20, 10CFR50, and ALARA limits. Boron recovery system equipment reduces the radioactivity level and removes boron from reactor coolant letdown. Effluent from the boron recovery system is either recycled to the primary grade water system, sent to the radioactive liquid waste system for further processing, or discharged to the circulating water discharge tunnel.

The reactor coolant letdown is pumped through a cesium removal ion exchanger and a boron recovery filter to the boron recovery tanks. It is then processed by the boron evaporator, which concentrates boric acid for reuse by the chemical volume control system. The boron evaporator distillate is discharged to the boron test tanks, where it is stored and processed further, if necessary, prior to recycling back to the primary grade water system.

The equipment of the boron recovery system includes cesium removal ion exchangers and filters; boron recovery tank, pumps and heaters; boron evaporator, reboiler, feed pumps, circulation pump and condenser; boron distillate tank, cooler and pump; boron evaporator bottoms cooler, preheater, pump and filters; boron test tank, heaters and pumps; and boron demineralizer and filter.

Also included in the scope of the boron recovery system are functionally related aerated equipment vents, drains, and sump liners as well as related mechanical, electrical, instrumentation and control equipment, and radiation monitoring equipment.

The boron recovery system produces an economic recovery in the form of recycled boric acid and demineralized water. Boric acid is expected to be recovered at a rate of 19 lb. per day, or 6935 lb per year. Based on the most accurate information available, the value of this economic recovery is $3600 per year. Demineralized water is expected to be recovered at a rate of 1300 gallons per day, or at an annual rate of 475000 gallons per year. The value of this economic recovery is $2970 per year. The operating and maintenance expenses associated with the boron recovery system is $298,600 per year.

In the absence of 10CFR50 and ALARA requirements, none of this equipment would have been necessary to meet 10CFR20 limits.

May, 1984

Liquid Waste Management System

A liquid waste management system is provided to collect and process liquid waste generated during normal plant operation to control the release of radioactive material to within 10CFR20 limits, to meet the design objectives of Appendix I to 10CFR50 and ALARA.

The liquid waste system is comprised of a high-level waste portion and a low-level waste portion. High-level waste drain tanks collect and store high-level radioactive liquid waste from building sumps, sample fluids, laboratory wastes, and other miscellaneous sources. Depending on the activity level of the waste in these tanks, the waste is processed either through the high-level radioactive waste filter and demineralizer, or in the waste evaporator subsystem. Effluent from the demineralizer or the distillate from the waste evaporator is collected in the waste test tanks, and then analyzed for radioactivity and chemistry parameters. Depending on analysis results, the distillate is recycled to the primary grade water system, or is discharged to the circulating water discharge tunnel, or recirculated for further processing. Assurance that waste above activity limits is not discharged to the environment is provided through sampling of the effluent and by a radiation monitor in the discharge line.

Low-level waste drain tanks collect and store low-level radioactive waste from various plant drains. This waste is sampled, analyzed, and discharged to the circulating water discharge tunnel after passing through effluent filters. As with the high-level waste stream, sampling and monitoring the discharge assure that waste above the activity limits is not discharged to the environment.

The equipment of the liquid waste management system includes the high level waste drain tank; waste evaporator, feed pumps, reboiler, circulation pump and condenser; waste distillate tank, pump and cooler; waste evaporator bottoms cooler, preheater, pumps and holding tank; waste test tanks, heater, pumps and demineralizer; low level waste drain tanks, pumps and filters; and acid and caustic chemical addition tanks.

Also included in the scope of the liguid waste management system are functionally related aerated equipment vents, drains, and sump liners, as well as related mechanical, electrical, instrumentation and control equipment, and radiation monitoring equipment.

The liquid waste system produces an economic recovery in the form of recycled demineralized water. This is estimated to be 438000 gallons per year. Based on the most accurate information available, the value of the economic benefit is $ 2740 per year.

The annual operating and maintenance expenses associated with the liquid waste system is $370,160 per year.

In the absence of 10CFR50 and ALARA requirements, none of this equipment would have been necessary to meet 10CFR20.

May, 1984

Gaseous Waste (Process) System

The gaseous waste (process) system is provided to collect and process gaseous radioactive waste generated from normal plant operation, to control the release of radioactive material to within 10CFR20 limits, and to meet the design objectives of Appendix I to 10CFR50 and ALARA.

The equipment of the gaseous waste (process) system includes the process gas precoolers, gycol chillers and refrigeration units; process gas charcoal bed absorbers; process gas prefilter, compressor and aftercooler; process gas receiver; and process vent fans and cooler.

Also included in the scope of the gaseous waste (process) system are functionally related mechanical, electrical, instrumentation and control equipment, and radiation monitoring equipment.

The gaseous waste (process) system produces an economic recovery in the form of recycled hydrogen gas. Hydrogen is expected to be recovered at a rate of 1440 cu. ft. per day, or 525600 cu. ft. per year. Based on the most accurate information available, the value of this economic recovery is $7100 per year. The operating and maintenance expenses associated with the gaseous waste (process) system is $67,600.

In the absence of 10CFR50 and ALARA requirements, none of this equipment would have been necessary to meet 10CFR20 limits.

May, 1984

Waste Disposal Building

The waste disposal building is divided into two separate structures; a liquid waste portion and a solid waste portion. The liquid waste portion is a three-story rectangular reinforced concrete structure with a steel-framed HVAC penthouse. It contains equipment from the liquid waste management system, solid waste system, and boron recovery system.

The solid waste portion is a single level rectangular structure with partial height reinforced walls and a steel-framed enclosure. It contains a waste compacting and solidification area, a radioactive waste storage and handling area, and an area for storing materials associated with the waste solidification system. These areas are serviced by a 25 ton overhead bridge crane. Both liquid and solid waste portions are also serviced by a 10 ton monorail, which is used primarily for spent filter handling.

Building ventilation is provided by a heating and ventilating unit and associated supply distribution ductwork.

The building is provided with supporting systems such as lighting, fire protection, housekeeping floor drains, flush water hose connections, service air connections, and electrical utilities.

May, 1984

Radioactive Solid Waste System

The radioactive solid waste system is provided to collect, process, package, and temporarily store radioactive materials prior to shipment offsite for ultimate disposal. Materials handled as solid waste include concentrated waste solutions from the liquid waste management system, concentrated boric acid from the boron recovery system, spent resin from radioactive process demineralizers and ion exchangers, spent filter cartridges, and miscellaneous sludges. All wet solid waste is dewatered and solidified prior to shipment offsite.

Solid waste material such as concentrated waste solutions from the evaporators is stored in tanks in the liquid waste system until time of shipment. This material is pumped to the solid waste processing area for solidification and packaging.

Resins sluiced from demineralizers and ion exchangers are stored in the spent resin hold tank until the time of shipment offsite. The resins are slurried to the shipping container, where they are allowed to settle. Excess water is removed by the spent resin dewatering pump.

The equipment of the radioactive solid waste system includes the spent resin dewatering tank, hold tank, transfer pump and filter; spent resin dewatering pump skid; waste forwarding pump skid; spent resin recycle pump; resin fill and dewatering head; and binder tank and pump.

Also included in the scope of the radioactive solid waste system are functionally related mechanical, electrical, instrumentation and control equipment, and radiation monitoring equipment.

The company does not expect to sell, nor to be able to sell, radioactive solid waste to anyone at any price.

May, 1984

Gaseous Waste (HVAC) System

The gaseous waste (HVAC) system is provided to collect and process gaseous radioactive waste emitted from normal plant operation, to control the release of radioactive materials to within 10CFR20 limits, and to meet the design objectives of Appendix I to 10CFR50 and ALARA.

Radioactive gases are collected from areas within buildings containing radioactive fluid systems using a separate exhaust duct system and are filtered prior to release. Ventilation systems subject to radioactive release during normal plant operation are as follows:

1. Fuel Building Ventilation
2. Auxiliary Building Ventilation
3. Turbine Building Ventilation
4. Containment Structure Ventilation
5. Engineered Safety Features Building Ventilation
6. Waste Disposal Building Ventilation
7. Service Building Ventilation

Exhaust flows from fuel building ventilation, auxiliary building ventilation, the containment purge air subsystem of containment structure ventilation, waste disposal building ventilation, and the potentially contaminated area air-conditioning subsystem of service building ventilation are passed through various filter units, as necessary, prior to discharge to the environment.

The equipment of the gaseous waste (HVAC) system includes dedicated or functionally related ducts, blowers, filter plenums, and heating and ventilating units, as well as associated mechanical, electrical, instrumentation and control equipment, and radiation monitoring equipment.

In the absence of 10CFR50 and ALARA requirements, none of this equipment would have been necessary to meet 10CFR20 limits.

May, 1984

Condensate Polishing Demineralizer Resin Regeneration System

The condensate polishing demineralizer resin regeneration system recycles spent demineralizer resins. The resins require periodic replacement or cleaning by regeneration. To reduce quantities of radioactive solid waste, the spent resins are chemically regenerated.

The resin regeneration system also includes equipment to treat chemical wastes which are a byproduct of the regeneration process. Drainage from all equipment flows to the waste neutralizing sumps where these wastes are neutralized and tested for radioactivity. If nonradioactive, the wastes are discharged to the circulating water discharge tunnel. If radioactive, discharge is to the condensate demineralizer liquid waste system.

The condensate demineralizer liquid waste system (LWC) is provided to collect, chemically treat, and concentrate liquid waste from the regeneration of condensate demineralizers and other turbine plant wastes. Liquid waste from the condensate demineralizer - mixed bed system is collected by the regenerant evaporator feed tanks and processed in the regenerant chemical evaporator. The effluent is normally recycled to the condensate system via the regenerant demineralizer and filter, but can also be discharged to the environment via the circulating water discharge tunnel. Assurance that waste above acceptable limits is not discharged to the environment is provided by a radiation monitor in the discharge line.

The equipment of the condensate polishing demineralizer resin regeneration (CPDRR) system includes the lime slurry tank, pumps, dissolving tank and solution filter; ultrasonic resin cleaner; cation and anion regenerant tanks; acid and caustic measuring tanks and feed pumps; rotary air blower; recovered water tank; sluicing water pumps; acid and caustic neutralizing feed pumps; caustic dilution water heater and storage tank; waste neutralizing sump and sump pumps; regenerant evaporator feed tanks and pumps; regenerant evaporator, reboiler, circulating pump and condenser; regenerant distillate tank, pump, cooler, demineralizer and filter; and regenerant evaporator bottoms cooler, reheater and pumps.

Also included in the scope of the CPDRR System are functionally related aerated equipment vents and sump liners, as well as related mechanical, electrical, and instrumentation and control equipment, and radiation monitoring equipment.

The CPDRR System produces an economic recovery in the form of recycled demineralized water. This water is expected to be recovered at a rate of 1,117,000 gallons per year. Based on the most accurate information available, the value of this economic benefit is $6980 per year.

The annual operating and maintenance expenses associated with the condensate polishing liquid waste system is $120,940 per year.

The company does not expect to sell, nor be able to sell, spent resins to anyone at any price.

May, 1984

Condensate Polisher Enclosure

The condensate polisher enclosure contains the resin regeneration equipment of the condensate polisher demineralizer resin regeneration system. It also contains the eight condensate polishing vessels. It is a 2 story, steel sided structure erected on a concrete mat which contains the concrete recessed neutralizing sump. The structure is provided with supporting systems such as lighting, fire protection, housekeeping floor drains, flush water hose connections, service air connections, and electrical utilities.

Building ventilation is provided by a heating and ventilating unit and associated supply distribution ductwork.

The resin regeneration equipment occupies 75% of the structure on a volume basis.