6/30/76

Dockets Nos. 50-245
and 50-336

Northeast Nuclear Energy Company
ATTN: Mr. D. C. Switzer
President
P. O. Box 270
Hartford, Connecticut 06101

Gentlemen:

By application for license amendment dated February 19, 1976, you requested a change to the Environmental Technical Specifications for Millstone Units Nos. 1 and 2. The requested change would modify paragraph 2.1.1.9 in that the temperature range now specified as 30°F to 150°F for the intake and discharge water temperature monitors would be changed to a temperature range of 23°F to 130°F. The installed instrumentation is required to monitor and ultimately limit the condenser cooling water temperature differential across the main condenser of each unit. This change does not affect any specified water temperature limits nor the ability to monitor these limits but was requested in order to accurately reflect the capability of the instrumentation that was installed. Accordingly, we find the proposed change to be acceptable.

By application for license amendment dated March 1, 1976, you requested a 3-month extension, from April 1, 1976 to July 2, 1976 of the implementation date for revised offgas release limits, contained in the Millstone Units Nos. 1 and 2 Environmental Technical Specifications, based upon the need to evaluate design deficiencies associated with your offgas recombiner system. Your letter dated May 19, 1976 informed us that the offgas recombiner was inoperable. In addition, your letter of May 19, 1976 provided a schedule for construction of a recombiner of proven design and also proposed interim measures for treating the offgas from Millstone Unit No. 1. By letter dated June 22, 1976, you superseded your application for license amendment dated March 1, 1976. The June 22, 1976 request proposed revised offgas release limits for Millstone Units Nos. 1 and 2. Our assessment of this request is set forth in the enclosed Environmental Impact Appraisal.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

In the course of our review, we have determined that these proposed amendments do not involve significant new safety information of a type not considered by a previous Commission safety review of the facility. The amendments do not involve a significant increase in the probability or consequences of an accident, do not involve a significant decrease in a safety margin, and therefore do not involve a significant hazards consideration. We have also concluded that there is reasonable assurance that the health and safety of the public will not be endangered by this action, nor will it be inimical to the common defense and security.

Accordingly, the Commission has issued the enclosed Amendment No. 25 to Provisional Operating License No. DPR-21 and Amendment No. 10 to Facility Operating License No. DPR-65 for Millstone Units Nos. 1 and 2 respectively. These amendments incorporate the following changes into the Environmental Technical Specifications for Millstone Units Nos. 1 and 2: (1) change paragraph 2.1.1.9 to modify the temperature range previously specified as 30°F to 150°F for the intake and discharge water temperature monitors to a temperature range of 23°F to 130°F, and (2) provide revised offgas release limits.

A copy of the Notice of Issuance of Amendments to Operating Licenses and Negative Declaration is also enclosed for your information. It is being filed with the Office of the Federal Register for publication.

Sincerely,

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
1. Environmental Impact Appraisal
2. Amendment No. 25 to DPR-21
3. Amendment No. 10 to DPR-65
4. Federal Register Notice

cc w/encls:
See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

THE CONNECTICUT LIGHT AND POWER COMPANY,
THE HARTFORD ELECTRIC LIGHT COMPANY,
WESTERN MASSACHUSETTS ELECTRIC COMPANY, AND
NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-245

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 1

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 25
License No. DPR-21

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment by the Connecticut Light and Power Company, The Hartford Electric Light Company, Western Massachusetts Electric Company, and Northeast Nuclear Energy Company (the licensees), dated February 19, 1976 and June 22, 1976, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Environmental Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Environmental
Technical Specifications

Date of Issuance: June 30, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 25

CHANGES TO THE ENVIRONMENTAL TECHNICAL SPECIFICATIONS

PROVISIONAL OPERATING LICENSE NO. DPR-21

DOCKET NO. 50-245

Replace pages 2.1-2, 2.4-6, 2.4-7, 2.4-8, 2.4-10 and 2.4-12 with the attached revised pages bearing the same numbers. Changed areas on the revised pages are reflected by marginal lines.

2.1.1.7 The difference between the sensor outputs specified in 2.1.1.5 and 2.1.1.6 shall be recorded continuously during normal power operations. The output shall be alarm actuated when the limits specified on Δ T in 2.1.1.1 and 2.1.1.2 are exceeded.

2.1.1.8 Temporary malfunction of the temperature monitoring systems shall not be restrictive on plant operations providing one inlet and one outlet sensor system are functional or provided that inlet and outlet temperatures are logged on an hourly basis.

2.1.1.9 The range of the sensors described in Specifications 2.1.1.5 and 2.1.1.6 shall be 23°F to 130°F. The total uncertainty (due to accuracy and instrument drift) of the sensor systems shall be ±1°F.

2.1.1.10 An annual channel calibration of the sensor systems shall be performed.

2.1.1.11 A monthly channel functional test of the sensor system shall be performed.

2.1.1.12 Reporting Requirement

A prompt report as described in Section 5.6.2.a.(1) shall be made when any of the limits and requirements specified in Sections 2.1.1.1 through 2.1.1.3 are exceeded.

Bases

The limits specified here are consistent with those contained in the NPDES permit issued by the State of Connecticut, Department of Environmental Protection.

Specification 2.1.1.1 covers the case of Routine Operation when all four condenser cooling water pumps in each unit are operating. The 23°F Δ T across the condensers of Unit 1 and Unit 2 as indicated in the USAEC Final Environmental Statement for Millstone Nuclear Power Station dated June 1973 is basically a design value. However as has been observed during the operation of Unit 1, the Δ T at maximum station load can be as high as 25°F especially during the cooler seasons because of variations in the plant operating efficiencies that are tied to the intake water temperature and an actual cooling water flow rate that is less than that used in the design calculations.

Specification 2.1.1.2.(a) covers the case when only three of the four condenser cooling water pumps are operating at any one unit. For this case the maximum Δ T across the condenser is 32°F. Operation with less than four pumps can occur during periods of pump failure, inspection, maintenance or during condenser heat treatment.

Specification 2.1.1.2.(b) covers the period when a pump failure occurs during 3 pump operation. It corresponds to the 2 pump operation case at 100% power output. The 24-hour period will be sufficient to allow maintaining system load during a period of unusual electrical load demands (emergency) and permit corrective action.

2.4.2 Gaseous Waste Effluents

2.4.2.1 Objective

To define the limits and conditions for the controlled release of radioactive materials in gaseous effluents to the environs to ensure that these releases are as low as practicable.

2.4.2.2 Specification

A. Should any of the conditions of 2.4.2.2.A.1. or 2. listed below exist, the licensee shall make an investigation to identify the causes of the release rates, define and initiate a program of action to reduce the release rates to design objective levels and report these actions to the Commission within 30 days from the end of the quarter during which the releases occurred.

1. If the average release rate of noble gases from the site during any calendar quarter is such that:

$$\sum_i \bar{E}_{i\beta} \left[0.51\, Q_{is} + 720\, Q_{iv}\right] > 1$$

or $$\sum_i \bar{E}_{i\gamma} \left[31\, Q_{is} + 570\, Q_{iv}\right] > 1$$

where Q_s = release rate from main stack of Unit 1 in Ci/sec (elevated releases)

Q_v = release rate (sum of vents from Units 1 and 2) in Ci/sec (ground release)

i = the individual nuclide

$\bar{E}_{i\gamma}$ = the average gamma energy per disintegration (Mev)

$\bar{E}_{i\beta}$ = the average beta energy per disintegration (Mev)

Refer to Table 2.4-5 for $\bar{E}\ \beta$ and $\bar{E}\ \gamma$ values to be used.

2. If the average release rate of all iodines and radioactive materials in particulate form per site with half-lives greater than eight days during any calendar quarter is such that:

$$3.95 \times 10^6\, Q_s + 1.53 \times 10^8\, Q_v > 1$$

B. The average release rate from the site during any calendar quarter shall be such that:

1. For noble gases:

$$\sum_i \bar{E}_{i\beta} [0.13\ Q_{is} + 180\ Q_{iv}] < 1$$

and

$$\sum_i \bar{E}_{i\gamma} [7.6\ Q_{is} + 140\ Q_{iv}] \leq 1$$

2. For all iodines and radioactive materials in particulate form with half-lives greater than eight days:

$$9.9 \times 10^5\ Q_s + 3.8 \times 10^7\ Q_v \leq 1$$

C. The average release rate from the site during any 12 consecutive months shall be such that:

1. $$\sum_i \bar{E}_{i\beta} [0.25 Q_{is} + 360\ Q_{iv}] \leq 1$$

and

$$\sum_i \bar{E}_{i\gamma} [15.4 Q_{is} + 280\ Q_{iv}] \leq 1$$

2. For all iodines and radioactive materials in particulate form with half-lives greater than eight days:

$$1.98 \times 10^6\ Q_s + 7.63 \times 10^7\ Q_v \leq 1$$

D. The maximum release rate from the site shall be such that:

1. For noble gases:

$$\sum_i Q_{is} [3.2\ \bar{E}_{i\gamma} + 0.04 \bar{E}_{i\beta}] + Q_v [23\ \bar{E}_{i\gamma} + 58\ \bar{E}_{i\beta}] \leq 1$$

2. For all radioiodine and radioactive material in particulate form with half-lives greater than eight days, released to the environs as part of the gaseous wastes:

$$7.9 \times 10^{4} Q_s + 3.04 \times 10^{6} Q_v \leq 1$$

E. DELETED

F. During the release of gaseous wastes from the waste gas holdup system of Unit 2, and the offgas system of Unit 1, at least one monitor in each process stream shall be operating and set to alarm and to initiate the automatic closure of a discharge valve prior to exceeding the limits specified in 2.4.2.2.D above. The operability of the automatic isolation valve shall be demonstrated quarterly for each unit.

G. If the hydrogen concentration reaches an alarm setpoint of four percent by volume, the offgas flow through the noble gas retention equipment shall be immediately terminated by closing the appropriate isolation valves and the offgas shall be sent to the stack via the 30 minute holdup pipe.

H. If no stack monitor is operating, a shutdown of Unit 1 shall be initiated and the reactor will be in a hot shutdown condition within 10 hours.

I. The drywell of Unit 1 shall be purged through the standby gas treatment system at all times the primary containment integrity is required.

J. The maximum activity to be contained in one waste gas storage tank of Unit 2 shall not exceed 16,000 curies (considered as Xe-133).

K. If limiting conditions in 2.4.2.2.B through 2.4.2.2.J above are exceeded, plant operations shall be modified as required to restore compliance with these specifications. Prompt reporting requirements for exceeding these limiting conditions for operation are detailed in Section 5.6.2.a.(1).

G. A minimum of one hydrogen monitor in the Unit 1 off-gas line downstream of the recombiners shall be operable during power operation when the recombiners are in service. If no monitor is available, continued operation of the recombiners and noble gas retention equipment is acceptable provided grab samples are taken and analyzed for hydrogen concentration each shift.

On a weekly basis a sample of known hydrogen concentration shall be introduced to these instruments and adjustments of outputs made such that they respond with specified range and accuracy to the known hydrogen concentration.

Once a month a channel functional test shall be performed on these monitoring systems.

H. Failure to comply with Sections 2.4.2.3.A through 2.4.2.3.G requires prompt reporting as specified in Section 5.6.2.a.(1).

Bases

The release of radioactive materials in gaseous waste effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20, and should be as low as practicable in accordance with the requirements of 10 CFR Part 50.36a. These specifications provide as low as reasonably achievable limits for the release of radioactive materials in gaseous effluents, for the interim period until an augmented air ejector off-gas system is operable. The values chosen are consistant with interim limits used for other BWR's without augmented systems. The design objectives for noble gas and radioiodine and particulates releases are 9 mrem/yr total body dose at the critical residence and 15 mrem/yr thyroid dose at the nearest milk animal respectively. At the same time these specifications permit the flexibility of operation, compatible with considerations of health and safety to assure that the public is provided with a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR Part 20. It is expected that using this operational flexibility under unusual operating conditions, and by exerting every effort to keep levels of radioactive material in gaseous wastes as low as practicable, the annual releases will not exceed a small fraction of the concentration limits specified in 10 CFR Part 20. These efforts should include consideration of meteorological conditions during releases.

There is a reduction factor of 1220 by which the maximum permissible concentration of radioactive iodine in air should be reduced to allow for the grass-goat-milk pathway. This factor has been derived for radioactive iodine, taking into account the milk pathway and is 1220 for the grass-goat-milk-child pathway. It has been applied to radionuclides of iodine and to all radionuclides in particulate form with a half-life greater than eight days. The factor is not appropriate for iodine where milk is not a pathway of exposure or for the other radionuclides.

the ENE sector at a distance of 4022 meters where the χ/Q_3 is 5.0×10^{-7} sec/m^3 for ground releases, and 1.3×10^{-8} sec/m^3 for elevated releases. The grass-goat-milk-child thyroid chain is controlling.

The assumptions used for these calculations are: (1) onsite meteorological data for the most critical 22.5 degree sector; (2) credit for building wake; and (3) a reconcentration factor of 1220 and a grazing factor of 0.5 was applied for possible ecological chain effects from radioactive iodine and particulate releases where applicable.

Specifications 2.4.2.2.B and 2.4.2.2.C establish upper limits for the releases of noble gases, iodines and particulates with half-lives greater than eight days, and iodine-131 at twice the design objective annual quantity during any calendar quarter, or four times the design objective annual quantity during any period of 12 consecutive months. The intent of this specification is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in higher releases than the objectives.

In addition to the limiting conditions for operation of Specifications 2.4.2.2.B, 2.4.2.2.C and 2.4.2.2.D, the reporting requirements of 2.4.2.2.A delineate that the cause be identified whenever the release of gaseous effluents exceeds one-half the design objective annual quantity during any calendar quarter, and describe the proposed program of action to reduce such release rates to the design objectives.

General Specification 2.4.2.2.F and 2.4.2.2.H are in accordance with Design Criterion 64 of 10 CFR Part 50.

Specification 2.4.2.2.I requires that the primary containment atmosphere of Unit 1 receive treatment for the removal of gaseous iodine and particulates prior to its release.

Specification 2.4.2.2.G and monitoring requirement 2.4.2.3.G require that hydrogen concentration in the offgas system of Unit 1 shall be monitored at all times the recombiners are in service.

Specification 2.4.2.2.J limits the maximum offsite dose above background to below the limits of 10 CFR Part 20, postulating that the rupture of a waste gas storage tank holding the maximum activity releases all of the contents to the atmosphere.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

THE CONNECTICUT LIGHT AND POWER COMPANY,
THE HARTFORD ELECTRIC LIGHT COMPANY,
WESTERN MASSACHUSETTS ELECTRIC COMPANY, AND
NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-336

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 10
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment by the Connecticut Light and Power Company, The Hartford Electric Light Company, Western Massachusetts Electric Company, and Northeast Nuclear Energy Company (the licensees), dated February 19, 1976 and June 22, 1976, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Environmental Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Environmental
Technical Specifications

Date of Issuance: June 30, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 10

CHANGES TO THE ENVIRONMENTAL TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Replace pages 2.1-2, 2.4-6, 2.4-7, 2.4-8, 2.4-10 and 2.4-12, with the attached revised pages bearing the same numbers. Changed areas on the revised pages are reflected by marginal lines.

2.1.1.7 The difference between the sensor outputs specified in 2.1.1.5 and 2.1.1.6 shall be recorded continuously during normal power operations. The output shall be alarm actuated when the limits specified on Δ T in 2.1.1.1 and 2.1.1.2 are exceeded.

2.1.1.8 Temporary malfunction of the temperature monitoring systems shall not be restrictive on plant operations providing one inlet and one outlet sensor system are functional or provided that inlet and outlet temperatures are logged on an hourly basis.

2.1.1.9 The range of the sensors described in Specifications 2.1.1.5 and 2.1.1.6 shall be 23°F to 130°F. The total uncertainty (due to accuracy and instrument drift) of the sensor systems shall be ±1°F.

2.1.1.10 An annual channel calibration of the sensor systems shall be performed.

2.1.1.11 A monthly channel functional test of the sensor system shall be performed.

2.1.1.12 Reporting Requirement

A prompt report as described in Section 5.6.2.a.(1) shall be made when any of the limits and requirements specified in Sections 2.1.1.1 through 2.1.1.3 are exceeded.

Bases

The limits specified here are consistent with those contained in the NPDES permit issued by the State of Connecticut, Department of Environmental Protection.

Specification 2.1.1.1 covers the case of Routine Operation when all four condenser cooling water pumps in each unit are operating. The 23°F Δ T across the condensers of Unit 1 and Unit 2 as indicated in the USAEC Final Environmental Statement for Millstone Nuclear Power Station dated June 1973 is basically a design value. However as has been observed during the operation of Unit 1, the Δ T at maximum station load can be as high as 25°F especially during the cooler seasons because of variations in the plant operating efficiencies that are tied to the intake water temperature and an actual cooling water flow rate that is less than that used in the design calculations.

Specification 2.1.1.2.(a) covers the case when only three of the four condenser cooling water pumps are operating at any one unit. For this case the maximum Δ T across the condenser is 32°F. Operation with less than four pumps can occur during periods of pump failure, inspection, maintenance or during condenser heat treatment.

Specification 2.1.1.2.(b) covers the period when a pump failure occurs during 3 pump operation. It corresponds to the 2 pump operation case at 100% power output. The 24-hour period will be sufficient to allow maintaining system load during a period of unusual electrical load demand (emergency) and permit corrective action.

2.4.2 Gaseous Waste Effluents

2.4.2.1 Objective

To define the limits and conditions for the controlled release of radioactive materials in gaseous effluents to the environs to ensure that these releases are as low as practicable.

2.4.2.2 Specification

A. Should any of the conditions of 2.4.2.2.A.1. or 2. listed below exist, the licensee shall make an investigation to identify the causes of the release rates, define and initiate a program of action to reduce the release rates to design objective levels and report these actions to the Commission within 30 days from the end of the quarter during which the releases occurred.

1. If the average release rate of noble gases from the site during any calendar quarter is such that:

$$\sum_i \bar{E}_{i\beta} \left[0.51\, Q_{is} + 720\, Q_{iv}\right] > 1$$

or

$$\sum_i \bar{E}_{i\gamma} \left[31\, Q_{is} + 570\, Q_{iv}\right] > 1$$

where Q_s = release rate from main stack of Unit 1 in Ci/sec (elevated releases)

Q_v = release rate (sum of vents from Units 1 and 2) in Ci/sec (ground release)

i = the individual nuclide

$\bar{E}_{i\gamma}$ = the average gamma energy per disintegration (Mev)

$\bar{E}_{i\beta}$ = the average beta energy per disintegration (Mev)

Refer to Table 2.4-5 for $\bar{E}$ β and $\bar{E}$ γ values to be used.

2. If the average release rate of all iodines and radioactive materials in particulate form per site with half-lives greater than eight days during any calendar quarter is such that:

$$3.95 \times 10^6\, Q_s + 1.53 \times 10^8\, Q_v > 1$$

B. The average release rate from the site during any calendar quarter shall be such that:

1. For noble gases:

$$\sum_i \bar{E}_{i\beta} \left[0.13\ Q_{is} + 180\ Q_{iv}\right] < 1$$

and

$$\sum_i \bar{E}_{i\gamma} \left[7.6\ Q_{is} + 140\ Q_{iv}\right] \leq 1$$

2. For all iodines and radioactive materials in particulate form with half-lives greater than eight days:

$$9.9 \times 10^5\ Q_s + 3.8 \times 10^7\ Q_v \leq 1$$

C. The average release rate from the site during any 12 consecutive months shall be such that:

1. $$\sum_i \bar{E}_{i\beta} \left[0.25 Q_{is} + 360\ Q_{iv}\right] \leq 1$$

and

$$\sum_i \bar{E}_{i\gamma} \left[15.4 Q_{is} + 280\ Q_{iv}\right] \leq 1$$

2. For all iodines and radioactive materials in particulate form with half-lives greater than eight days:

$$1.98 \times 10^6\ Q_s + 7.63 \times 10^7\ Q_v \leq 1$$

D. The maximum release rate from the site shall be such that:

1. For noble gases:

$$\sum_i Q_{is} \left[3.2\ \bar{E}_{i\gamma} + 0.04 \bar{E}_{i\beta}\right] + Q_v \left[23\ \bar{E}_{i\gamma} + 58\ \bar{E}_{i\beta}\right] \leq 1$$

2. For all radioiodine and radioactive materials in particulate form with half-lives greater than eight days, released to the environs as part of the gaseous wastes:

$$7.9 \times 10^{4} Q_s + 3.04 \times 10^{6} Q_v \leq 1$$

E. DELETED

F. During the release of gaseous wastes from the waste gas holdup system of Unit 2, and the offgas system of Unit 1, at least one monitor in each process stream shall be operating and set to alarm and to initiate the automatic closure of a discharge valve prior to exceeding the limits specified in 2.4.2.2.D above. The operability of the automatic isolation valve shall be demonstrated quarterly for each unit.

G. If the hydrogen concentration reaches an alarm setpoint of four percent by volume, the offgas flow through the noble gas retention equipment shall be immediately terminated by closing the appropriate isolation valves and the offgas shall be sent to the stack via the 30 minute holdup pipe.

H. If no stack monitor is operating, a shutdown of Unit 1 shall be initiated and the reactor will be in a hot shutdown condition within 10 hours.

I. The drywell of Unit 1 shall be purged through the standby gas treatment system at all times the primary containment integrity is required.

J. The maximum activity to be contained in one waste gas storage tank of Unit 2 shall not exceed 16,000 curies (considered as Xe-133).

K. If limiting conditions in 2.4.2.2.B through 2.4.2.2.J above are exceeded, plant operations shall be modified as required to restore compliance with these specifications. Prompt reporting requirements for exceeding these limiting conditions for operation are detailed in Section 5.6.2.a.(1).

G. A minimum of one hydrogen monitor in the Unit 1 offgas line downstream of the recombiners shall be operable during power operation when the recombiners are in service. If no monitor is available, continued operation of the recombiners and noble gas retention equipment is acceptable provided grab samples are taken and analyzed for hydrogen concentration each shift.

On a weekly basis a sample of known hydrogen concentration shall be introduced to these instruments and adjustments of outputs made such that they respond with specified range and accuracy to the known hydrogen concentration.

Once a month a channel functional test shall be performed on these monitoring systems.

H. Failure to comply with Sections 2.4.2.3.A through 2.4.2.3.G requires prompt reporting as specified in Section 5.6.2.a.(1).

Bases

The release of radioactive materials in gaseous waste effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20, and should be as low as practicable in accordance with the requirements of 10 CFR Part 50.36a. These specifications provide as low as reasonably achievable limits for the release of radioactive materials in gaseous effluents, for the interim period until an augmented air ejector off-gas system is operable. The values chosen are consistant with interim limits used for other BWR's without augmented systems. The design objectives for noble gas and radioiodine and particulates releases are 9 mrem/yr total body dose at the critical residence and 15 mrem/yr thyroid dose at the nearest milk animal respectively. At the same time these specifications permit the flexibility of operation, compatible with considerations of health and safety to assure that the public is provided with a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR Part 20. It is expected that using this operational flexibility under unusual operating conditions, and by exerting every effort to keep levels of radioactive material in gaseous wastes as low as practicable, the annual releases will not exceed a small fraction of the concentration limits specified in 10 CFR Part 20. These efforts should include consideration of meteorological conditions during releases.

There is a reduction factor of 1220 by which the maximum permissible concentration of radioactive iodine in air should be reduced to allow for the grass-goat-milk pathway. This factor has been derived for radioactive iodine, taking into account the milk pathway and is 1220 for the grass-goat-milk-child pathway. It has been applied to radionuclides of iodine and to all radionuclides in particulate form with a half-life greater than eight days. The factor is not appropriate for iodine where milk is not a pathway of exposure or for the other radionuclides.

the ENE sector at a distance of 4022 meters where the χ/Q_3 is 5.0×10^{-7} sec/m^3 for ground releases, and 1.3×10^{-8} sec/m^3 for elevated releases. The grass-goat-milk-child thyroid chain is controlling.

The assumptions used for these calculations are: (1) onsite meteorological data for the most critical 22.5 degree sector; (2) credit for building wake; and (3) a reconcentration factor of 1220 and a grazing factor of 0.5 was applied for possible ecological chain effects from radioactive iodine and particulate releases where applicable.

Specifications 2.4.2.2.B and 2.4.2.2.C establish upper limits for the releases of noble gases, iodines and particulates with half-lives greater than eight days, and iodine-131 at twice the design objective annual quantity during any calendar quarter, or four times the design objective annual quantity during any period of 12 consecutive months. The intent of this specification is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in higher releases than the objectives.

In addition to the limiting conditions for operation of Specifications 2.4.2.2.B, 2.4.2.2.C and 2.4.2.2.D, the reporting requirements of 2.4.2.2.A delineate that the cause be identified whenever the release of gaseous effluents exceeds one-half the design objective annual quantity during any calendar quarter, and describe the proposed program of action to reduce such release rates to the design objectives.

General Specification 2.4.2.2.F and 2.4.2.2.H are in accordance with Design Criterion 64 of 10 CFR Part 50.

Specification 2.4.2.2.I requires that the primary containment atmosphere of Unit 1 receive treatment for the removal of gaseous iodine and particulates prior to its release.

Specification 2.4.2.2.G and monitoring requirement 2.4.2.3.G require that hydrogen concentration in the offgas system of Unit 1 shall be monitored at all times the recombiners are in service.

Specification 2.4.2.2.J limits the maximum offsite dose above background to below the limits of 10 CFR Part 20, postulating that the rupture of a waste gas storage tank holding the maximum activity releases all of the contents to the atmosphere.

ENVIRONMENTAL IMPACT APPRAISAL BY THE

DIVISION OF OPERATING REACTORS

SUPPORTING AMENDMENTS NO. 25 AND NO. 10

TO OPERATING LICENSES DPR-21 and DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY

MILLSTONE UNITS NOS. 1 AND 2

1. Description of Proposed Actions

On June 22, 1976, Northeast Nuclear Energy Company (NNECO) requested revisions to the Millstone Environmental Technical Specifications (ETS) because of technical problems with the newly installed augmented off-gas system. In July 1973 NNECO proposed to install augmented radwaste treatment systems to reduce gaseous and liquid radioactive effluents from Millstone Unit No. 1. The augmented systems were expected to be operational prior to 1976. On December 19, 1975 the NRC amended the Millstone Unit No. 1 ETS to include interim as low as practicable (now referred to as "as low as reasonably achievable" (ALARA)) radioactive effluent ETS to reflect the expected operation of the augmented systems. The implementation date for the interim ALARA gaseous radioactive effluent ETS was April 1, 1976 which was after the expected startup of the augmented off-gas system. On March 1, 1976, NNECO requested a license amendment to delay the implementation of the interim ALARA radioactive effluent ETS. This request was not granted. On May 19, 1976 the licensee informed the NRC, by letter and report, of the extent of the startup problems with the augmented off-gas system. Preoperational testing of the off-gas recombiner subsystem had determined that catalyst migration from the recombiners would render the augmented off-gas system unsuitable for operation. Technical and schedular work was proceeding to rectify the recombiner system problems; however, it did not appear that the problems could be resolved without a major redesign effort. NNECO indicated that the major redesign of the recombiner system would require an extended period of time due to necessary design engineering, equipment procurement and installation, and system testing. Although the augmented off-gas system neither was nor is now operational, the interim ALARA radioactive effluent ETS, which assumed an operable system, have been in effect since April 1, 1976. Consequently, NNECO has requested that the radioactive effluent ETS be revised to reflect the inoperative augmented off-gas system.

NNECO has proposed to change the methodology for calculating the radioactive effluent ETS noble gas release design objectives and limiting conditions for operation. The basis for this request is the results of environmental monitoring programs. NNECO has supplied empirical data which were extrapolated to correlate stack releases,

uCi/sec, with measured radiation doses in the environs of the Millstone Point site. NNECO claims that these data indicate that the noble gas release rate design objective should be 30,000 uCi/sec (based on the isotope noble gas mixture released in 1975). The basis for his conclusion is that the empirical model indicates a 5 mr/year total body exposure at the critical residence with a 30,000 uCi/sec yearly average release rate. This design objective would have resulted in (1) a report to the NRC (within 30 days) if the quarterly average release rate exceeded 60,000 uCi/sec (one half the yearly design objective during a quarter), (2) a maximum quarterly average release rate limit of 240,000 uCi/sec (twice the yearly design objective during a quarter), and (3) a maximum yearly release rate limit of 120,000 uCi/sec (four times the yearly design objective). NNECO also proposed changing the maximum release rate from the site for noble gas based on the empirical data. This change would have permitted a maximum release rate of 3,000,000 uCi/sec for short periods of time (peak releases).

We have evaluated NNECO's proposed changes to the noble gas radioactive effluent ETS. We agree with NNECO that the environmental monitoring data indicate that the radiation levels from the noble gas releases are a small fraction of the natural background radiation and the 10 CFR Part 20, Standards for Protection Against Radiation, requirements. However, we do not agree that there is sufficient empirical information available to revise our methodology for calculating radiation doses.

We do consider it appropriate, however, to change the interim ALARA radioactive effluent noble gas release specifications, while the augmented off-gas system problems are being corrected to reflect as low as reasonably achievable values for the existing system. The present interim ALARA ETS, assuming an operating augmented off-gas system, has a noble gas release rate design objective of 10,000 uCi/sec (based on the isotopic noble gas mixture released in 1975) which corresponds to 3.6 mrem/year total body exposure at the critical residence, using our calculational model described in Regulatory Guide 1.109. We consider a reasonable noble gas design objective for a reactor without an augmented off-gas system to be 25,000 uCi/sec. This release rate would correspond to a 9 mrem/year total body exposure at the critical residence using our calculational model. This design objective will result in (1) a report to the NRC (within 30 days) if the quarterly average release rate exceeded 50,000 uCi/sec, (2) a maximum quarterly average release rate limit of 200,000 uCi/sec, and (3) maximum yearly release rate limit of 100,000 uCi/sec. The 100,000 uCi/sec release rate has also been historically used as an interim "as low as practicable" noble gas release limit for boiling water reactors without augmented off-gas systems. The actual average noble gas release rate from Millstone Unit No. 1 during 1975 was 95,000 uCi/sec. With these reporting requirements, Specification 2.4.2.2.E is considered redundant and has therefore been deleted.

We do not agree with NNECO's proposed change for the maximum 10 CFR Part 20 noble gas release rate because of the lack of sufficient empirical data. The reactor should be capable of being operated within the existing maximum noble gas release rate (which corresponds to a stack release rate of about 480,000 uCi/sec) so that no change is warranted.

NNECO also proposed revisions to the radioiodine and particulate (with half lives greater than 8 days) radioactive effluent ETS based on environmental monitoring programs to determine the individual thyroid dose. In addition, a total yearly design objective quantity of 5 curies of Iodine-131 was also proposed.

We do not consider it appropriate to change our methodology based on limited environmental monitoring data for radioiodines and particulates. We do agree, however, that changes in the radioiodine and particulate ETS are appropriate to reflect as low as reasonably achievable values for the existing system. We are not revising the 15 mr/yr individual thyroid radiation dose design objectives or calculational methods. This individual thyroid radiation dose corresponds to a design objective quantity of 4 curies per year and will result in (1) a report to the NRC (within 30 days) if the quarterly release exceeds 2 curies, (2) a maximum quarterly release of 8 curies, and (3) a maximum yearly release of 16 curies. The actual radioiodine and particulate release from Millstone Unit No. 1 during 1975 was 10 curies. The present ETS also include a specific design objective quantity of 1 curie/reactor-yr for radioiodines and particulates (with half lives greater than 8 days). This specific design objective quantity is being deleted; however, NNECO will still have to operate within the individual thyroid radiation dose limits.

On June 4, 1976, in accordance with the requirements of Section V of Appendix I to 10 CFR Part 50, NNECO filed with the Commission (1) information as is necessary to evaluate the means employed for keeping levels of radioactivity in effluents to unrestricted areas as low as reasonable achievable and (2) plans and proposed technical specifications developed for the purpose of keeping releases of radioactive materials to unrestricted areas during normal reactor operations, including expected operational occurrences, as low as is reasonable achievable. Our preliminary review of this submittal indicates that the NNECO filing has satisfactorily met the requirements of Section V of Appendix I to 10 CFR Part 50.

The Millstone reactors are currently being evaluated for compliance with the design objectives of Appendix I to 10 CFR Part 50, Licensing of Production and Utilization Facilities. Revised standard ALARA radioactive effluent technical specifications are also being developed by the Commission. The evaluation of the licensee's Appendix I submittal may result in a further revision to their effluent systems and the technical specifications for these systems.

In addition to the changes discussed above, NNECO proposes to change the temperature range now specified as 30°F to 150°F for the intake and discharge water monitors to a temperature range of 23°F to 130°F. As discussed in Section 72, below, we find this acceptable.

2. Environmental Impact of the Proposed Action

The Final Environmental Statement (FES) for Millstone Unit Nos. 1 and 2, dated June 1973, evaluated the environmental impact of the radioactive effluents from Millstone Unit No. 1 without an augmented off-gas system. The implementation of these revised radioactive effluent ETS will not alter the environmental impact described in the FES.

NNECO is proceeding to rectify the existing problems with the augmented off-gas system as quickly as practicable. In addition, NNECO is evaluating the installation of an interim off-gas treatment system if the redesigned original system can not be made operable in a timely manner. Regardless, reactor operation without an augmented off-gas system is not expected to continue for more than one to two years. We will monitor NNECO's performance to minimize the release of material in gaseous effluents from Millstone Units Nos. 1 and 2.

With regard to the proposed change to the required temperature range of the intake and discharge water monitors, the proposed change reflects the present capability of these monitors as installed and does not affect the ability of these monitors to record the temperature differential across the main condenser of each unit. Thus, the proposed change does not affect the temperature differential limits, and therefore, does not have an environmental impact different from that previously evaluated and approved in the Final Environmental Statement for Millstone Units Nos. 1 and 2.

3. Conclusion and Basis for Negative Declaration

On the basis of the foregoing, it is concluded that there will be no environmental impact attributable to the proposed action other than has already been predicted and described in the Commission's FES for Millstone Nuclear Power Station Units Nos. 1 and 2 dated June 1973. Having made this conclusion, the Commission has further concluded that no environmental impact statement for the proposed action need be prepared and that a negative declaration to this effect is appropriate.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-245 AND 50-336

NORTHEAST NUCLEAR ENERGY COMPANY,
THE CONNECTICUT LIGHT AND POWER COMPANY,
THE HARTFORD ELECTRIC LIGHT COMPANY, AND
WESTERN MASSACHUSETTS ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO
OPERATING LICENSES

AND NEGATIVE DECLARATION

The Nuclear Regulatory Commission (the Commission) has issued Amendment No. 25 to Provisional Operating License No. DPR-21 and Amendment No. 10 to Facility Operating License No. DPR-65 to Northeast Nuclear Energy Company, The Connecticut Light and Power Company, The Hartford Electric Light Company, and Western Massachusetts Electric Company, which revised the Environmental Technical Specifications for operation of the Millstone Nuclear Power Station, Units Nos. 1 and 2 (the facilities) located in the Town of Waterford, Connecticut. The amendments are effective as of their date of issuance.

The amendments modify the Environmental Technical Specifications for the facilities to change (1) the temperature range for condenser cooling water temperature monitors from "30°F - 150°F" to "23°F - 130°F" and (2) the offgas release limits.

The applications for the amendments comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations

to 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has prepared an environmental impact appraisal for the revised Technical Specifications and has concluded that an environmental impact statement for this particular action is not warranted because there will be no environmental impact attributable to the proposed action other than that which has already been predicted and described in the Commission's Final Environmental Statement for Millstone Nuclear Power Station, Units Nos. 1 and 2 published in June 1973, and that a negative declaration to this effect is appropriate.

For further details with respect to this action, see (1) the applications for amendments dated February 19, 1976 and June 22, 1976, (2) Amendment No. 25 to License No. DPR-21, (3) Amendment No. 10 to License No. DPR-65, and (4) the Commission's Environmental Impact Appraisal. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. and at the Waterford Public Library, Rope Ferry Road, Route 156, Waterford, Connecticut 06385.

A copy of items (2), (3) and (4) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this 30 day of June 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

James Shea, Acting Chief
Operating Reactors Branch #3
Division of Operating Reactors