Mr. Martin L. Bowling
Recovery Officer - Millstone
Unit No. 2
Northeast Nuclear Energy Company
c/o Ms. Patricia A. Loftus
Director - Regulatory Affairs
P. O. Box 128
Waterford, CT 06385

April 1, 1998

SUBJECT: ISSUANCE OF AMENDMENT RELATING TO LOSS OF POWER, LEVEL ONE, TRIP SETPOINTS - MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2 (TAC NO. MA0213)

Dear Mr. Bowling:

The Commission has issued the enclosed Amendment No. 214 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2, in response to your application dated December 1, 1997.

The amendment changes the Technical Specifications (TSs) by adding a 2.0 second plus or minus 0.1 second time delay to the 4.16 kV Emergency Bus Undervoltage Loss of Power, Level One, trip setpoint and allowable values in TS Table 3.3-4.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,
Original signed by:
Daniel G. McDonald, Jr., Senior Project Manager
Special Projects Office - Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 214 to DPR-65
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

NORTHEAST NUCLEAR ENERGY COMPANY

THE CONNECTICUT LIGHT AND POWER COMPANY

THE WESTERN MASSACHUSETTS ELECTRIC COMPANY

DOCKET NO. 50-336

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 214
License No. DPR-65

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

   A. The application for amendment by Northeast Nuclear Energy Company, et al. (the licensee) dated December 1, 1997, complies 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 Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-65 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 214, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance, to be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Phillip F. McKee
Deputy Director for Licensing
Special Projects Office
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 1, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 214

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Replace the following pages of the Appendix A, Technical Specifications, with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove	Insert
3/4 3-20	3/4 3-20

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
8. LOSS OF POWER		
a. 4.16 kv Emergency Bus Undervoltage (Undervoltage relays) - level one	≥ 2912 volts with a 2.0 ± 0.1 second time delay	≥ 2877 volts with a 2.0 ± 0.1 second time delay
b. 4.16 kv Emergency Bus Undervoltage (Undervoltage relays) - level two	≥ 3700 volts with an 8.0 ± 2.0 second time delay	≥ 3663 volts with an 8.0 ± 2.0 second time delay
9. AUXILIARY FEEDWATER		
a. Manual	Not Applicable	Not Applicable
b. Steam Generator Level - Low	≥ 12%	≥ 10%

Amendment No. 13, 16, 17, 63, 72, 178, 198, 214

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 214

TO FACILITY OPERATING LICENSE NO. DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY

THE CONNECTICUT LIGHT AND POWER COMPANY

THE WESTERN MASSACHUSETTS ELECTRIC COMPANY

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By letter dated December 1, 1997, the Northeast Nuclear Energy Company, et al. (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 2 (MP2) Technical Specifications (TSs). The requested changes would change the TSs by adding a 2.0 second plus or minus 0.1 second time delay to the 4160 volt Emergency Bus Undervoltage Loss of Power, Level One, trip setpoint and allowable values in TS Table 3.3-4.

The Loss of Power protection for the safety-related 4160 volt emergency buses at MP2 are a portion of the Engineered Safety Features Actuation System (ESFAS). The ESFAS initiates safety systems, which control, localize, mitigate, and terminate design bases accidents and transients by cooling the reactor core, limiting fuel damage, limiting the magnitude and duration of pressure transients inside containment, provides long-term cooling, and limiting combustible gases and the release of radioactivity.

The 4160 volt emergency buses, 24C and 24D, voltage is monitored to assure that the safety-related loads are provided the required level of voltage necessary for them to perform their safety-related functions for the time assumed in the design bases accident and transient analysis for MP2. There are two levels of undervoltage (UV) protection on the 4160 volt buses.

Level One UV protection is provided to sense the complete loss of normal power to the buses. The trip setpoint for the Level One UV protection is 2912 volts (70%) of the 4160 volt design value with a 2.0 second plus or minus 0.1 second time delay and has an allowable value of 2877 volts with the same time delay. The allowable value is provided to account for uncertainties, such as setpoint drift, and the time delay is necessary to allow the protective equipment to perform in a coordinated manner.

Actuation of the Level One UV protection on a 4160 volt emergency bus results in several actions occurring including: (1) shedding all loads on the bus, (2) isolating the bus, (3) starting signal to the emergency diesel generator (EDG) associated with the bus, (4) a permissive signal to the EDG load sequencer, and (5) the safety-related loads that are sequenced onto the bus.

Level Two UV protection is provided to sense a degraded condition of the offsite power supply to the 4160 volt buses, which could result in damage or failure of safety-related loads if the offsite power supply is not disconnected. The trip setpoint for the Level Two protection is 3700 volts (88%) of the 4160 volt design value with an 8.0 second plus or minus 2.0 second time delay and has an allowable value of 3663 volts with the same time delay. The allowable value is provided for the same reason as previously noted. The time delay is provided, in this case, to allow short duration reductions in voltage without disconnecting the offsite power supply.

Reductions in the 4160 bus voltage, such as starting a large motor connected to a bus or short-term perturbations on the offsite power supply, will not damage or cause the safety-related loads connected to a bus to fail. If the degraded condition exists longer than the time delay, a trip signal is sent to the supply breaker of the Reserve Station Service Transformer (RSST), which disconnects the offsite power supply. If the voltage recovers prior to the preset time delay, the timer will reset and preclude the unnecessary disconnection of the offsite power supply. The Level Two UV trip is only in effect when the 4160 volt emergency buses, 24C and 24D, are being supplied from the offsite power supply via the RSST.

2.0 EVALUATION

The initial time delay of the Level One UV protection for the 4160 volt emergency buses was 0.5 second but was not included in TS Table 3.3-4. The time delay was changed to the current value of 2.0 seconds plus or minus 0.1 second during a steam generator replacement outage in 1992. Subsequent to the change, the Final Safety Analysis Report (FSAR) and surveillance procedures were updated to reflect the change. The change to the 2.0 second plus or minus 0.1 second time delay was implemented in accordance with 10 CFR 50.59 to improve the offsite electrical system stability. The increased time delay prevents disconnecting the 4160 volt emergency buses power supply as the result of voltage reduction transients that recover within the time delay. The licensee has determined that these momentary reductions in voltage would not result in the degradation or failure of the safety-related loads connected to the 4160 volt emergency buses. The licensee notes that the other two Millstone units also have approximately 2.0 second delays.

As previously noted, the Level Two UV protection for the 4160 volt buses already includes the time delays in TS Table 3.3-4 for it's trip setpoint and allowable values. The specific request is to add the 2.0 second plus or minus 0.1 second time delay to the Level One UV protection trip setpoint and allowable values. The proposed change is consistent with the NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants," Rev 1, April 1995, which includes two levels of UV protection with associated time delays.

The licensee analyzed the impact of the change from the 0.5 second to 2.0 seconds plus or minus 0.1 second time delay and concluded that ESFAS response times were still within the design bases accidents and transients impacted by the change. The bounding conditions analyzed were a loss-of-coolant accident (LOCA), which results in a safety injection actuation signal (SIAS), coincident with a loss of normal power (LNP). For this case, a comparison between the EDG response time for accident conditions coincident with the LNP trip functions was made to assure EDG availability. The calculated time for completing the LNP trip functions is 13.54 seconds with the original .5 second delay and 15.14 seconds with the proposed 2.0 second plus 0.1 second time delay. TS Surveillance, TS 4.8.1.1.2.a.2, requires a maximum EDG start time of 15 seconds upon receipt of an SIAS. In addition, 0.5 second is required to allow for ESFAS response time for a total SIAS initiated EDG start time of 15.5 seconds.

The proposed increase in the time delay results in reducing the time between completion of the LNP functions and the time the EDGs would be available to energize the safety-related buses. The NRC staff discussed with the licensee during a telephone conference call on February 26, 1998, the various component time delays considered in calculating the 15.14 seconds for completing the LNP functions. The licensee indicated that all of the component time delays were based on manufacturers data using the most conservative times (i.e. longest) provided or were based on test results. In addition, the licensee assumed a 10 second degraded voltage time delay to account for noninstantaneous loss of power. Thus, the 15.14 seconds necessary to complete the LNP trip functions is conservatively calculated and less than the SIAS initiated EDG start time of 15.5 seconds and there is reasonable assurance that the EDGs and the ESFAS would be capable of performing their safety-related functions assuming a LOCA coincident with an LNP. Therefore, The NRC staff has determined that the proposed changes to the MP2 TS Table 3.3-4, which will add a 2.0 second plus or minus 0.1 second time delay to the Level One UV protection trip setpoint and allowable values are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Connecticut State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (63 FR 2280 dated January 14, 1998). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: D. McDonald

Date: April 1, 1998