February 15, 1995

Mr. John F. Opeka
Executive Vice President, Nuclear
Connecticut Yankee Atomic Power Company
Northeast Nuclear Energy Company
Post Office Box 270
Hartford, CT 06141-0270

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M89380)

Dear Mr. Opeka:

The Commission has issued the enclosed Amendment No. 63 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2, in response to your application dated April 25, 1994 supplemented September 21, 1994.

The amendment changes the Technical Specifications concerning four related issues: (1) power-operated relief valve and block valve reliability; (2) low-temperature overpressure protection; (3) boron dilution; and (4) shutdown risk management. Specifically, the amendment revises Technical Specifications 3.4.3 and 3.4.9.3 to address the issues specifically raised in Generic Letter (GL) 90-06. Technical Specifications 3.1.1.3, 3.1.2.1, 3.1.2.2, 3.1.2.3, 3.1.2.4, 3.1.2.8, 3.4.1.4, 3.4.2.1, 3.4,9.1, 3.5.3,4.1.2.3, 4.1.2.3, 4.1.2.4, 4.4.1.4, 4.4.3.1, 4.4.3.2, 4.4.9.3.1, 4.4.9.3.2, 4.5.3.2, and 4.9.8.1 are revised to provide consistency either with proposed changes in GL 90-06 or are related to the boron dilution issue or shutdown risk management philosophies.

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,

Originalsigned by

210043

Guy S. Vissing, Senior Project Manager Project
Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 63 to DPR-65
2. Safety Evaluation

cc w/encls: See next page

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

February 15, 1995

Mr. John F. Opeka
Executive Vice President, Nuclear
Connecticut Yankee Atomic Power Company
Northeast Nuclear Energy Company
Post Office Box 270
Hartford, CT 06141-0270

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M89380)

Dear Mr. Opeka:

The Commission has issued the enclosed Amendment No. 185to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2, in response to your application dated April 25, 1994 supplemented September 21, 1994.

The amendment changes the Technical Specifications concerning four related issues: (1) power-operated relief valve and block valve reliability; (2) low-temperature overpressure protection; (3) boron dilution; and (4) shutdown risk management. Specifically, the amendment revises Technical Specifications 3.4.3 and 3.4.9.3 to address the issues specifically raised in Generic Letter (GL) 90-06. Technical Specifications 3.1.1.3, 3.1.2.1, 3.1.2.2, 3.1.2.3, 3.1.2.4, 3.1.2.8, 3.4.1.4, 3.4.2.1, 3.4,9.1, 3.5.3,4.1.2.3, 4.1.2.3, 4.1.2.4, 4.4.1.4, 4.4.3.1, 4.4.3.2, 4.4.9.3.1, 4.4.9.3.2, 4.5.3.2, and 4.9.8.1 are revised to provide consistency either with proposed changes in GL 90-06 or are related to the boron dilution issue or shutdown risk management philosophies.

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,

Guy S. Vissing, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 185 to DPR-65
2. Safety Evaluation

cc w/encls: See next page

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Millstone Nuclear Power Station
Unit 2

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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. 185
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 April 25, 1994, supplemented September 21, 1994, 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. 185 , 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, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: February 15, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 185

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

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

Remove	Insert
IV	IV
V	V
XI	XI
XII	XII
XIV	XIV
3/4 1-4	3/4 1-4
3/4 1-8	3/4 1-8
3/4 1-9	3/4 1-9
3/4 1-11	3/4 1-11
3/4 1-12	3/4 1-12
3/4 1-13	3/4 1-13
3/4 1-18	3/4 1-18
-----	3/4 4-1d
3/4 4-2	3/4 4-2
3/4 4-3	3/4 4-3
-----	3/4 4-3a
3/4 4-17	3/4 4-17
3/4 4-21a	3/4 4-21a
3/4 4-21b	3/4 4-21b
3/4 5-7	3/4 5-7
-----	3/4 5-7a
3/4 9-8a	3/4 9-8a
B 3/4 1-1	B 3/4 1-1
B 3/4 1-3	B 3/4 1-3
-----	B 3/4 1-3a
B 3/4 4-2	B 3/4 4-2
-----	B 3/4 4-2a
B 3/4 5-2	B 3/4 5-2
B 3/4 9-2	B 3/4 9-2
-----	B 3/4 9-2a

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

BASES

INDEX

BASES

SECTION — PAGE

3/4.4 REACTOR COOLANT SYSTEM

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3/4.6 CONTAINMENT SYSTEMS

BASES

BORON DILUTION

LIMITING CONDITION FOR OPERATION

3.1.1.3 The flow rate of reactor coolant through the core shall be ≥ 1000 gpm whenever a reduction in Reactor Coolant System boron concentration is being made.

APPLICABILITY: ALL MODES.

ACTION:

With the flow rate of reactor coolant through the core < 1000 gpm, immediately suspend all operations involving a reduction in boron concentration of the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

4.1.1.3 The reactor coolant flow rate through the core shall be determined to be ≥ 1000 gpm prior to the start of and at least once per hour during a reduction in the Reactor Coolant System boron concentration by either:

a. Verifying at least one reactor coolant pump is in operation, or

b. Verifying that at least one low pressure safety injection pump is in operation and supplying ≥ 1000 gpm through the core.

3/4.1.2 BORATION SYSTEMS

FLOW PATHS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.1 As a minimum, one of the following boron injection flow paths shall be OPERABLE:

a. A flow path with a piping temperature of greater than 55°F from the boric acid storage tank via either a boric acid pump or a gravity feed connection and a charging pump to the Reactor Coolant System if only the boric acid storage tank in Specification 3.1.2.7a is OPERABLE, or

b. The flow path from the refueling water storage tank via a charging pump and a high pressure safety injection pump to the Reactor Coolant System if only the refueling water storage tank in Specification 3.1.2.7b is OPERABLE.

APPLICABILTIY: MODES 5 and 6.

ACTION:

With none of the above flow paths OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one injection path is restored to OPERABLE status.

SURVEILLANCE REQUIREMENT

4.1.2.1 At least one of the above required flow paths shall be demonstrated OPERABLE:

a. At least once per 7 days by exercising all testable power operated valves in the flow path required for boron injection through at least one complete cycle,

b. At least once per 31 days by verifying the correct position of all manually operated valves in the boron injection flow path not locked, sealed or otherwise secured in position.

c. At least once per 24 hours by verifying that the boric acid piping temperature is greater than 55°F. This may be accomplished by verifying that the ambient temperature in the vicinity of the boric acid piping on elevations (-)5'-0" and (-)25'-6" is greater than 55°F.

REACTIVITY CONTROL SYSTEMS

FLOW PATHS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.2 The following boron injection flowpaths to the RCS via the charging pump(s) shall be OPERABLE:

a. At least one of the following combinations:

   1) One boric acid storage tank, with the tank contents in accordance with Figure 3.1-1 and a piping temperature greater than 55°F, its associated gravity feed valve, and boric acid pump.

   2) Two boric acid storage tanks, with the weighted average of the combined contents of the tanks in accordance with Figure 3.1-1 and a piping temperature greater than 55°F, their associated gravity feed valves, and boric acid pumps.

   3) Two boric acid storage tanks, each with contents in accordance with Figure 3.1-1 and a piping temperature greater than 55°F, at least one gravity feed valve, and at least one boric acid pump.

b. The flow path from an OPERABLE Refueling Water Storage Tank, as per Specification 3.1.2.8.b.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With fewer than the above required boron injection flow paths to the Reactor Coolant System OPERABLE, restore the required boron injection flow paths to the Reactor Coolant System to OPERABLE status within 48 hours or make the reactor subcritical within the next 2 hours and borate to a SHUTDOWN MARGIN equivalent to at least 3.6% Δ k/k at 200°F; restore the required flow paths to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 36 hours.

CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3 One charging pump and one high pressure safety injection pump* in the boron injection flow path required OPERABLE pursuant to Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus. One additional charging pump and high pressure safety injection pump may be OPERABLE provided that the RCS is vented through a passive vent of $\geq$ 2.8 in^2.

APPLICABILITY: MODES 5 and 6.

ACTION:

a. With less than the minimum required pumps OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one of the required pumps is restored to OPERABLE status.

b. With more than the maximum allowed pumps OPERABLE take immediate action to comply with 3.1.2.3.

SURVEILLANCE REQUIREMENTS

4.1.2.3.1 The above required charging pump and high pressure safety injection pump shall be demonstrated OPERABLE at least once per 31 days by:

a. Starting (unless already operating) the pump from the control room,

b. Verifying pump operation for at least 15 minutes, and

c. Verifying that the pump is aligned to receive electrical power from an OPERABLE emergency bus.

4.1.2.3.2 All charging pumps, except for the above OPERABLE pump(s), shall be demonstrated inoperable at least once per 12 hours by verifying that the motor circuit breakers are in the open position.

4.1.2.3.3 All high pressure safety injection pumps, except for the above OPERABLE pump(s), shall be demonstrated inoperable at least once per 12 hours by either: (a) verifying that the motor circuit breakers have been disconnected from their power supply circuits, or (b) shutting and tagging the discharge valve with the key lock on the control panel (2-SI-654 or 2-SI-656).

* When in MODE 6 with the reactor vessel head removed then only one charging pump is required.

4.1.2.3.4. The RCS passive vent(s) of greater than or equal to 2.8 square inches shall be verified to be open at least once per 12 hours* whenever the vent(s) is being used for overpressure protection.

* Except when the vent pathway is provided by a valve which is locked, sealed, or otherwise secured in the open position, or by having the reactor head removed, then verify these open at least once per 31 days.

CHARGING PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two** charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 48 hours or be in HOT STANDBY within the next 4 hours; restore at least two charging pumps to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the next 36 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.4.1 Two charging pumps shall be demonstrated OPERABLE at least once per 31 days on a STAGGERED TEST BASIS by:

a. Starting (unless already operating) each pump from the control room, and

b. Verifying that each pump operates for at least 15 minutes.

4.1.2.4.2 One charging pump shall be demonstrated inoperable at least once per 12 hours whenever the temperature of one or more of the RCS cold legs is < 300°F by verifying that the motor circuit breaker is in the open position.

**A maximum of two charging pumps shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than 300°F.

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.8 Both of the following borated water sources shall be OPERABLE:

a. At least one of the following Boric Acid Storage Tank(s) combinations:

1) One boric acid storage tank, with the tank contents in accordance with Figure 3.1-1 and a minimum temperature of 55°F, its associated gravity feed valve, and boric acid pump, or

2) Two boric acid storage tanks, with the weighted average of the combined contents of the tanks in accordance with Figure 3.1-1 and a minimum temperature of 55°F, their associated gravity feed valves, and boric acid pumps, or

3) Two boric acid storage tanks, each with contents in accordance with Figure 3.1-1 and a minimum temperature of 55°F, at least one gravity feed valve, and at least one boric acid pump.

and b. The refueling water storage tank with:

1. A minimum contained volume of 370,000 gallons of water,

2. A minimum boron concentration of 1720 ppm,

3. A minimum solution temperature of 50°F when in MODES 1 and 2, and

4. A minimum solution temperature of 35°F when in MODES 3 and 4.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one borated water source OPERABLE, restore at least two borated water sources to OPERABLE status within 48 hours or make the reactor subcritical within the next 2 hours and borate to a SHUTDOWN MARGIN equivalent to at least 3.6% Δk/k at 200°F; restore at least two borated water sources to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 36 hours.

REACTOR COOLANT SYSTEM

REACTOR COOLANT PUMPS - SHUTDOWN

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.4.1.4 A maximum of two reactor coolant pumps shall be OPERABLE.

APPLICABILITY: MODE 5

ACTION:

With more than two reactor coolant pumps OPERABLE, take immediate action to comply with Specification 3.4.1.4.

SURVEILLANCE REQUIREMENTS

4.4.1.4 Two reactor coolant pumps shall be demonstrated inoperable at least once per 12 hours by verifying that the motor circuit breakers have been disconnected from their electrical power supply circuits.

REACTOR COOLANT SYSTEM

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

3.4.2.1 A minimum of one pressurizer code safety valve shall be OPERABLE with a lift setting of 2500 PSIA ± 1%.

APPLICABILITY: MODE 4 when the temperature of any RCS cold leg is greater than 275°F.

ACTION:

With no pressurizer code safety valve OPERABLE, immediately suspend all operations involving positive reactivity changes and place an OPERABLE shutdown cooling loop into operation.

3.4.2.2 All pressurizer code safety valves shall be OPERABLE with a lift setting of 2500 PSIA ± 1%.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS

4.4.2 Each pressurizer code safety valve shall be demonstrated OPERABLE with a lift setting of 2500 PSIA ± 1%, in accordance with Specification 4.0.5.

RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.3 Both power operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one or both PORVs inoperable and capable of being manually cycled, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) with power maintained to the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With one PORV inoperable and not capable of being manually cycled, within 1 hour either restore the PORV to OPERABLE status or close its associated block valve and remove power from the block valve; restore the PORV to OPERABLE status within the following 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With both PORVs inoperable and not capable of being manually cycled, within 1 hour either restore at least one PORV to OPERABLE status or close the associated block valves and remove power from the block valves and be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

d. With one or both block valves inoperable, within 1 hour restore the block valve(s) to OPERABLE status or place its associated PORV(s) controls in the "close" position. Restore at least one block valve to OPERABLE status within the next hour if both block valves are inoperable; restore any remaining inoperable block valve to OPERABLE status within 72 hours; otherwise be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE:

a. Once per 31 days by performance of a CHANNEL FUNCTIONAL TEST, excluding valve operation, and

b. Once per 18 months by performance of a CHANNEL CALIBRATION.

c. Once per 18 months the PORVs shall be bench tested at conditions representative of MODES 3 or 4.

4.4.3.2 Each block valve shall be demonstrated OPERABLE once per 92 days by operating the valve through one complete cycle of full travel. This demonstration is not required if a PORV block valve is closed and power removed to meet Specification 3.4.3 b or c.

3/4.4.9 PRESSURE/TEMPERATURE LIMITS

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

3.4.9.1 The Reactor Coolant System (except the pressurizer) temperature and pressure shall be limited in accordance with the limit lines shown on Figure 3.4-2 during heatup, cooldown, criticality, and inservice leak and hydrostatic testing with:

a. A maximum heatup of 20°F in any one hour period with T_{avg} at or below 110°F, 30°F in any one hour period with T_{avg} at or below 140°F and above 110°F, and 50°F in any one hour period with T_{avg} above 140°F.

b. A maximum cooldown of 80°F in any one hour period with T_{avg} above 300°F and a maximum cooldown of 30°F in any one hour period with T_{avg} at or below 300°F and above 200°F, and 20°F in any one hour period with T_{avg} at or below 200°F and above 120°F, and 5°F in any one hour period with T_{avg} at or below 120°F.

c. A maximum temperature change of 5°F in any one hour period, during hydrostatic testing operations above system design pressure.

APPLICABILITY: MODES 1, 2*, 3, 4 and 5.

ACTION:

With any of the above limits exceeded, restore the temperature and/or pressure to within the limit within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operations or be in at least HOT STANDBY within the next 6 hours and reduce the RCS T_{avg} and pressure to less than 200°F and 500 psia, respectively, within the following 30 hours.

*See Special Test Exception 3.10.3.

LIMITING CONDITION FOR OPERATION

3.4.9.3 Both power operated relief valves (PORVs) shall be OPERABLE with a lift setting of less than or equal to 450 psig.

APPLICABILITY: MODE 4 when the temperature of any RCS cold leg is less than or equal to 275°F. MODE 5 and MODE 6 when the head is on the reactor vessel and the RCS is not vented through a 2.8 square inch or larger vent.

ACTION:

a. With one PORV inoperable in MODE 4 restore the inoperable PORV to OPERABLE status within 7 days or depressurize and vent the RCS through a ≥1.4 square inch vent(s) within the next 8 hours.

b. With one PORV inoperable in MODES 5 or 6, either (1) restore inoperable PORV to OPERABLE status within 24 hours, or (2) complete depressurization and vent the RCS through at least a 1.4 square inch vent within a total of 32 hours.

c. With both PORVs inoperable, complete depressurization and vent the RCS through at least a ≥2.8 square inch vent(s) within 8 hours.

d. With the RCS vented per ACTIONS a, b, or c, verify the vent pathway at least once per 31 days when the pathway is provided by a valve(s) that is locked, sealed, or otherwise secured in the open position; otherwise, verify the vent pathway every 12 hours.

e. In the event either the PORVs or the RCS vent(s) are used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or RCS vent(s) on the transient, and any corrective action necessary to prevent recurrence.

SURVEILLANCE REQUIREMENT

4.4.9.3.1 Each PORV shall be demonstrated OPERABLE by:

a. Performance of a CHANNEL FUNCTIONAL TEST on the PORV actuation channel, but excluding valve operation, within 31 days prior to entering a condition in which the PORV is required OPERABLE and at least once per 31 days thereafter when the PORV is required OPERABLE.

b. Performance of a CHANNEL CALIBRATION on the PORV actuation channel at least once per 18 months.

c. Verifying the PORV block valve is open at least once per 72 hours when the PORV is being used for overpressure protection.

d. Testing in accordance with the inservice test requirements of Specification 4.0.5.

ECCS SUBSYSTEMS - T_{avg} < 300°F

LIMITING CONDITION FOR OPERATION

3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:

a. One # OPERABLE high-pressure safety injection pump, and

b. An OPERABLE flow path capable of taking suction from the refueling water storage tank on a safety injection actuation signal and automatically transferring suction to the containment sump on a sump recirculation actuation signal.

APPLICABILITY: MODES 3* and 4.

ACTION:

a. With no ECCS subsystem OPERABLE, restore at least one ECCS subsystem to OPERABLE status within one hour or be in COLD SHUTDOWN within the next 20 hours.

b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.

c. With two or more high pressure safety injection pumps OPERABLE and the temperature of one or more of the RCS cold legs ≤ 275°F take immediate action to have a maximum of one high pressure safety injection pump OPERABLE.

SURVEILLANCE REQUIREMENTS

4.5.3.1 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2.

---

* With pressurizer pressure < 1750 psia.

\# A maximum of one high-pressure safety injection pump shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is ≤ 275°F.

SURVEILLANCE REQUIREMENTS (continued)

4.5.3.2 All high-pressure safety injection pumps, except the above required OPERABLE pump, shall be demonstrated inoperable at least once per 12 hours whenever the temperature of one or more of the RCS cold legs is $\leq$ 275°F by either: (1) verifying that the motor circuit breakers have been disconnected from their power supply circuits; or (2) shutting and tagging the discharge valve with the key lock on the control panel (2-SI-654 or 2-SI-656).

SURVEILLANCE REQUIREMENTS

4.9.8.1 At least one shutdown cooling loop shall be verified to be in operation and circulating reactor coolant at a flow rate greater than or equal to 1000 gpm and consistent with decay heat requirements at least once per 12 hours.

4.9.8.2 Once per 7 days, the required shutdown cooling loops, if not in operation, shall be determined OPERABLE by verifying correct breaker alignments and indicated power availability for pump and shutdown cooling valves, or:

Verifying that the reactor vessel water level is at or above the vessel flange, the reactor vessel pit seal is installed, and greater than 370,000 gallons of water is available as a heat sink, as indicated by either:

a. refuel pool level greater than 23 feet above the reactor vessel flange, or

b. the combined volume of the refuel pool and refueling water storage tank exceeds 370,000 gallons and a flow path is available from the refueling water storage tank to the refuel pool.

3/4.1.1 BORATION CONTROL

3/4.1.1.1 and 3/4.1.1.2 SHUTDOWN MARGIN

A sufficient SHUTDOWN MARGIN ensures that 1) the reactor can be made subcritical from all operating conditions, 2) the reactivity transients associated with postulated accident conditions are controllable within acceptable limits, and 3) the reactor will be maintained sufficiently subcritical to preclude inadvertent criticality in the shutdown condition.

SHUTDOWN MARGIN requirements vary throughout core life as a function of fuel depletion, RCS boron concentration, and RCS T_{avg}. The most restrictive condition occurs at EOL, with T_{avg} at no load operating temperature, and is associated with a postulated steam line break accident and resulting uncontrolled RCS cooldown. In the analysis of this accident, the minimum SHUTDOWN MARGIN specified in the CORE OPERATING LIMITS REPORT is initially required to control the reactivity transient. Accordingly, the SHUTDOWN MARGIN required by Specification 3.1.1.1 is based upon this limiting condition and is consistent with FSAR accident analysis assumptions. For earlier periods during the fuel cycle, this value is conservative. With $T_{avg} \leq 200°F$, the reactivity transients resulting from any postulated accident are minimal and the reduced SHUTDOWN MARGIN specified in the CORE OPERATING LIMITS REPORT provides adequate protection.

3/4.1.1.3 BORON DILUTION AND ADDITION

A minimum flow rate of at least 1000 GPM provides adequate mixing, prevents stratification and ensures that reactivity changes will be gradual during boron concentration changes in the Reactor Coolant System. This was done to prevent vortexing in the SDCS when in mid-loop operation, while being consistent with boron dilution analysis assumptions. A flow rate of at least 1000 GPM will circulate the full Reactor Coolant System volume in approximately 90 minutes. With the RCS in mid-loop operation, the Reactor Coolant System volume will circulate in approximately 25 minutes. The reactivity change rate associated with boron concentration changes will be within the capability for operator recognition and control.

3/4.1.1.4 MODERATOR TEMPERATURE COEFFICIENT (MTC)

The limitations on MTC are provided to ensure that the assumptions used in the accident and transient analyses remain valid through each fuel cycle. The surveillance requirements for measurement of the MTC during each fuel cycle are adequate to confirm the MTC value since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup. The confirmation that the measured MTC value is within its limit provides assurance that the coefficient will be maintained within acceptable values throughout each fuel cycle.

3/4.1.2 BORATION SYSTEMS (Continued)

The analysis to determine the boration requirements assumed that the Reactor Coolant System is borated concurrently with cooldown. In the limiting situation when letdown is not available, the cooldown is assumed to be initiated within 26 hours and cooldown to 220°F, is completed in the next 28 hours.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity change in the event the single injection system becomes inoperable.

The boron capability required below 200°F is based upon providing a SHUTDOWN MARGIN within the limit specified in the CORE OPERATING LIMITS REPORT at 140°F after xenon decay. This condition requires either 3750 gallons of 2.5% boric acid solution from the boric acid tanks or 57,300 gallons of 1720 ppm borated water from the refueling water storage tank.

The maximum boron concentration requirement (3.5%) and the minimum temperature requirement (55°F) for the Boric Acid Storage Tank ensures that boron does not precipitate in the Boric Acid System. The daily surveillance requirement provides sufficient assurance that the temperature of the tank will be maintained higher than 55°F at all times.

A minimum boron concentration of 1720 ppm is required in the RWST at all times in order to satisfy safety analysis assumptions for boron dilution incidents and other transients using the RWST as a borated water source as well as the analysis assumption to determine the boration requirement to ensure adequate shutdown margin.

A maximum of two charging pumps OPERABLE, when RCS temperature is less than 300°F, ensures that the maximum inadvertent dilution flow rate as assumed in the boron dilution analysis is 88 gallons per minute.

The requirements for maximum pumping capability to reduce shutdown risk and low temperature overpressure protection are met by balancing the number of OPERABLE pumps with PORVs and RCS vents. An LTOP accident scenario assumes all OPERABLE pumps start, one relief path fails, and RCS pressure then must remain less than the 10CFR50, Appendix G limits. For shutdown risk reduction, it is desirable to have the maximum pump capacity and maintain the RCS full (not vented). The scenarios considered by these technical specifications are as follows: (1) A minimum pumping capability of 1 charging and 1 HPSI pump with relief from 2 PORVs (to account for single failure); (2) pumping capacity of 2 charging pumps and 1 HPSI pump or 2 charging pumps and 2 HPSI pumps with relief from an RCS passive vent of greater than or equal to 2.8 square inches. To further reduce shutdown risk by maximizing pumping capacity, a HPSI pump may be made inoperable but available at short notice by shutting its discharge valve with the key lock on the control panel.

3/4.1.3 MOVEABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of a CEA ejection accident are limited to acceptable levels.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original criteria are met.

The ACTION statements applicable to an immovable or untrippable CEA and to a large misalignment ($\geq$ 20 steps) of two or more CEAs, require a prompt shutdown of the reactor since either

During operation, all pressurizer code safety valves must be OPERABLE to prevent the RCS from being pressurized above its safety limit of 2750 psia. The combined relief capacity of these valves is sufficient to limit the Reactor Coolant System pressure to within its Safety Limit of 2750 psia following a complete loss of turbine generator load while operating at RATED THERMAL POWER and assuming no reactor trip until the first Reactor Protective System trip setpoint (Pressurizer Pressure-High) is reached (i.e., no credit is taken for a direct reactor trip on the loss of turbine) and also assuming no operation of the pressurizer power operated relief valve or steam dump valves.

3/4.4.3 RELIEF VALVES

The power operated relief valves (PORVs) operate to relieve RCS pressure below the setting of the pressurizer code safety valves. These relief valves have remotely operated block valves to provide a positive shutoff capability should a relief valve become inoperable. The electrical power for both the relief valves and the block valves is capable of being supplied from an emergency power source to ensure the ability to seal this possible RCS leakage path.

With the PORV inoperable and capable of being manually cycled, either the PORV must be restored, or the flow path isolated within 1 hour. The block valve should be closed, but the power must be maintained to the associated block valve, since removal of power would render the block valve inoperable. Although the PORV may be designated inoperable, it may be able to be manually opened and closed and in this manner can be used to perform its function. PORV inoperability may be due to seat leakage, instrumentation problems, automatic control problems, or other causes that do not prevent manual use and do not create a possibility for a small break LOCA. Operation of the plant may continue with the PORV in this inoperable condition for a limited period of time not to exceed the next refueling outage, so that maintenance can be performed on the PORVs to eliminate the degraded condition. The PORVs should normally be available for automatic mitigation of overpressure events and should be returned to OPERABLE status prior to entering MODE 4 after a refueling outage.

Quick access to the PORV for pressure control can be made when power remains on the closed block valve.

If one block valve is inoperable, then it must be restored to OPERABLE status, or the associated PORV placed in the closed position. The prime importance for the capability to maintain closed the block valve is to isolate a stuck open PORV. Therefore, if the block valve cannot be restored to OPERABLE status within 1 hour, the required action is to place the associated PORV in the closed position to preclude its automatic opening for an overpressure event and to avoid the potential for a stuck open PORV at a time that the block valve is inoperable. Although the block valve may be designated inoperable, it may be able to be manually opened and closed and in this manner can be used to perform its function. Block valve inoperability may be due to seat leakage, instrumentation problems, automatic control problems, or other causes that do not prevent manual use and do not create a possibility for a small break LOCA. This condition is only intended to permit operation of the plant for a limited period of time not to exceed the next refueling outage so that maintenance can be performed on the block valve to eliminate the seat leakage condition or other similar concern. The block valve should normally be available to allow PORV operation for automatic mitigation of overpressure events. The block valves should be returned to OPERABLE status prior to entering MODE 4 after a refueling outage.

If more than one PORV is inoperable and not capable of being manually cycled, it is necessary to either restore at least one valve within the completion time of 1 hour or isolate the flow path by closing and removing the power to the associated block valve, cooldown, depressurize, and vent the RCS.

3/4.4.4 PRESSURIZER

An OPERABLE pressurizer provides pressure control for the reactor coolant system during operations with both forced reactor coolant flow and with natural circulation flow. The minimum water level in the pressurizer assures the pressurizer heaters, which are required to achieve and maintain pressure control, remain covered with water to prevent failure, which occurs if the heaters are energized uncovered. The maximum water level in the pressurizer ensures that this parameter is maintained within the envelope of operation assumed in the safety analysis. The maximum water level also ensures that the RCS is not a hydraulically solid system and that a steam bubble will be provided to accommodate pressure surges during operation. The steam bubble also protects the pressurizer code safety valves and power operated relief valve against water relief. The requirement that a minimum number of pressurizer heaters be OPERABLE enhances the capability of the plant to control Reactor Coolant System pressure and establish and maintain natural circulation.

The requirement that 130 kW of pressurizer heaters and their associated controls be capable of being supplied electrical power from an emergency bus provides assurance that these heaters can be energized during a loss of offsite power condition to maintain natural circulation at HOT STANDBY.

3/4.4.5 STEAM GENERATORS

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is

The purpose of the ECCS throttle valve surveillance requirements is to provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

Only one HPSI pump may be OPERABLE in MODE 4 with RCS temperatures less than or equal to 275°F due to the restricted relief capacity with Low-Temperature Overpressure Protection System. To reduce shutdown risk by having additional pumping capacity readily available, a HPSI pump may be made inoperable but available at short notice by shutting its discharge valve with the key lock on the control panel.

3/4.5.4 REFUELING WATER STORAGE TANK (RWST)

The OPERABILITY of the RWST as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The limits on RWST minimum volume and boron concentration ensure that 1) sufficient water is available within containment to permit recirculation cooling flow to the core, and 2) the reactor will remain subcritical in the cold condition following mixing of the RWST and the RCS water volumes with all control rods inserted except for the most reactive control assembly. These assumptions are consistent with the LOCA analyses.

3/4.9.6 CRANE OPERABILITY - CONTAINMENT BUILDING

The OPERABILITY requirements of the cranes used for movement of fuel assemblies ensures that: 1) each crane has sufficient load capacity to lift a fuel element, and 2) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE BUILDING

The restriction on movement of loads in excess of the nominal weight of a fuel assembly and CEA over irradiated fuel assemblies ensures that no more than the contents of one fuel assembly will be ruptured in the event of a fuel handling accident. Specific analysis has been performed for the drop of a consolidated fuel storage box on an intact fuel assembly. This assumption is consistent with the activity release assumed in the accident analyses.

3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION

The requirement that at least one shutdown cooling loop be in operation at ≥ 1000 gpm ensures that (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, (2) sufficient coolant circulation is maintained through the reactor core to minimize the effects of a boron dilution incident and prevent boron stratification, and (3) is consistent with boron dilution analysis assumptions.

The requirement to have two shutdown cooling loops OPERABLE when the refuel pool is unavailable as a heat sink ensures that a single failure of the operating shutdown cooling loop will not result in a complete loss of decay heat removal capability. With the reactor vessel water level at or above the vessel flange, the reactor vessel pit seal installed, and a combined available volume of water in the refueling pool and refueling water storage tank in excess of 370,000 gallons, a large heat sink is readily available for core cooling. Adequate time is thus available to initiate emergency procedures to provide core cooling in the event of a failure of the operating shutdown cooling loop.

3/4.9.9 and 3/4.9.10 CONTAINMENT RADIATION MONITORING AND CONTAINMENT PURGE VALVE ISOLATION SYSTEM

The OPERABILITY of these systems ensures that the containment purge valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of these systems is required to restrict the release of radioactive material from the containment atmosphere to the environment.

3/4.9.11 and 3/4.9.12 WATER LEVEL-REACTOR VESSEL AND STORAGE POOL WATER LEVEL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 185

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 April 25, 1994, as supplemented September 21, 1994, the Northeast Nuclear Energy Company (NNECO or the licensee) submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 2 Technical Specifications (TS). These proposed changes are in response to Generic Letter (GL) 90-06 "Resolution of Generic Issue 70, 'Power-Operated Relief Valve and Block Valve Reliability,' and Generic Issue 94, 'Additional Low-Temperature Overpressure Protection for Light-Water Reactors,' Pursuant to 10 CFR 50.54(f)."

GL 90-06 represents the staff's technical position on the two generic issues; (GI) GI-70 which involves the evaluation of the reliability of pressurizer power operated relief valves (PORV) and block valves, and GI-94, which addresses the concerns of overpressure protection and the need to restrict the allowed outage time for a low-temperature overpressure protection (LTOP) channel in operating Modes 4, 5, and 6. The specific proposed TS changes related to GI-70 are TSs 3.4.2.1 and 3/4.4.3 and the specific proposed TS changes related GI-94 are TSs 3.4.1.4, 3.4.9.1, and 3/4.4.9.3.

Also included in the submittal, are proposed TS changes to correct a deficiency identified in Licensee Event Report (LER) 93-016-00, dated August 27, 1993. The licensee identified that the assumptions in the boron dilution event analysis and the related plant operating procedures conflicted with the requirements on the shutdown cooling (SDC) system operation. The specific proposed TS changes related to boron dilution are TSs 3/4.1.1.3, 3.1.2.2, 3/4.1.2.4, 3.1.2.8 and 4.9.8. To enhance plant safety, the licensee also proposed TS changes to improve shutdown risk management. The specific proposed TS changes are TSs 3.1.2.1 and 3/4.5.3.

Finally, the licensee proposed modifications to TS 3/4.1.2.3, Charging Pumps - Shutdown, so that the TS will remain consistent with the previously discussed proposed TS changes.

The September 21, 1994, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination or expand the scope of the original Federal Register Notice.

2.0 EVALUATION

The licensee's submittal encompasses four related issues; PORV and block valve reliability, LTOP, boron dilution and shutdown risk management. The staff review of the proposed changes is discussed below.

2.1 Changes Due to GI-70, PORV and Block Valve Reliability

The staff determined that over a period of time the role of PORVs has changed to perform more safety-related functions. Therefore, a need has arisen for increased reliability of both the PORVs and the associated block valves. Based on the findings of GI-70, the staff concluded, in GL 90-06, that the following actions should be taken to improve the reliability of PORVs and block valves.

1. Include PORVs and block valves within the scope of an operational quality assurance program that is in compliance with 10 CFR Part 50, Appendix B. This program should include the following elements:

    a. The addition of PORVs and block valves to the plant operational Quality Assurance List.

    b. Implementation of a maintenance/refurbishment program for PORVs and block valves that is based on the manufacturer's recommendations or guidelines and is implemented by trained plant maintenance personnel.

    c. When replacement parts and spares, as well as completed components are required for existing non-safety-grade PORVs and block valves (and associated control systems), it is the intent of this generic letter that these items may be procured in accordance with the original construction codes and standards.

2. PORVs, PORV control air systems and block valves should be covered by subsection IWV of Section XI of the ASME Code. PORV testing should be performed in Modes 3 or 4. PORVs and block valves should be included in motor-operated valve (MOV) test program discussed in GL 89-10.

3. Modify the limiting conditions for operations for Modes 1, 2, and 3 as specified in Attachments A-1 through A-3 of GL 90-06.

To address PORV reliability, the licensee has proposed changes to TSs 3.4.3, 3.4.2.1 and surveillance 4.4.3.1.c. NNECO proposes to modify TS 3.4.3 to allow the manual cycling of the valve in the case where the valve has been declared inoperable but can still be closed and therefore continue to perform the intended safety function. The modification would not change the PORV and block valve actuation circuitry or the valves' power supply configuration.

The proposed modification to TS 3.4.2.1 eliminates the applicability of the reactor coolant system (RCS) safety valves during Mode 5 operation. The safety valves are not used for LTOP mitigation, therefore the reference to Mode 5 does not apply. This change is consistent with the guidance of GL 90-06.

The licensee proposes to bench test their PORVs in lieu of in-situ testing. By letter dated January 11, 1993, the licensee indicated that they will follow the staff position of having the PORVs bench tested by qualified laboratory at conditions representative of Modes 3 or 4. The licensee further agreed to ensure that the proper reinstallation of the PORVs and controls is performed and verified for continued operability. This alternative is in agreement with the position outlined in a letter from the staff to the licensee dated November 6, 1992, and is, therefore, acceptable.

NNECO has proposed changes to the TS that will increase the reliability of the PORVs and associated block valves through increased surveillance testing and increase the availability of the PORVs by allowing manual actuation. These changes are within the guidance of GL 90-06 and, therefore, the staff finds these proposed changes acceptable.

2.2 Low Temperature Overpressure Protection (GI-94)

GI-94 was developed after the implementation of Multi-Plant Action Item B-04 because a number of LTOP events were still occurring. It was noted in the staff review of these events that at least one LTOP channel was out of service and in a few cases both LTOP channels were inoperable.

This led to the staff's conclusion that a substantial improvement in LTOP system availability was necessary when the potential for an overpressure event is the highest, especially during water-solid operations. Therefore, based on the findings in GI-94 the staff has concluded, in GL 90-06, that the current Technical Specification for Overpressure Protection should be modified to reduce the allowed outage time (AOT) for a single channel from 7 days to 24 hours when the plant is operating in Modes 5 or 6. This guidance is applicable to plants that rely on both PORVs and residual heat removal (RHR) safety relief valves (SRVs) or that rely on RHR SRVs only. The licensee proposed the following TS changes to meet the requirements of GL 90-06 while enhancing the availability of equipment to reduce shutdown risk.

The current TS requires either one high pressure safety injection (HPSI) or one charging pump be operable during Modes 5 and 6. The proposed changes for TSs 3.1.2.1 and 3.1.2.3 are to ensure that one HPSI and one charging pump are operable during Mode 5 or 6 and if an additional HPSI pump or charging pump is operable the RCS must be vented by a vent ≥ 2.8 in^2. As stated by the NNECO, the control of the number of boron injection flowpaths during shutdown, will (1) ensure that an LTOP condition is not created by the operation of too many pumps, (2) maximize the capability of mitigating shutdown risk scenarios by requiring an additional injection source, and (3) ensure that the LTOP and boron dilution analysis remain bounding.

The proposed modifications to TS 3/4.4.9.3 indicate that both PORVs are to be operable during Mode 4 when the RCS temperature ≤ 275 °F and Modes 5 and 6 when the reactor vessel head is on and the RCS is not vented by a vent ≥ 2 in^2. TS and surveillance 3/4.4.9.3 are modified to increase operational flexibility by using the PORV or RCS vent for venting purposes. The AOT for the LTOP system was also reduced from 7 days to 24 hours during Modes 5 and 6. The changes to these TSs are consistent with the guidance of GL 90-06.

The proposed modification to TS 3.4.1.4 limits the number of reactor coolant pumps allowed to be operable during Mode 5. TS 3.4.9.1 proposes to add a restriction, of 5 °F per hour on the cooldown rate when the RCS is less than 120 °F. These modifications are in response to NRC Information Notice 93-58, "Non-Conservatism in Low Temperature Overpressure Protection for Pressurizer Water Reactors", and compensate for the non-conservatisms found in the LTOP analysis, ensuring that unanticipated pressure rises do not occur.

Based on the intent of GL 90-06 to reduce the occurrence of LTOP events and the licensee's compliance with the guidance and information of GL 90-06 and IN 93-58, the staff finds the proposed modifications acceptable.

2.3 Boron Dilution

The previous boron dilution event analysis (October 1988) required a minimum shutdown cooling flow of 2450 gallons per minute (gpm) in Modes 4 and 5. Plant operating procedures required the shutdown cooling (SDC) flow rate to be less than 1500 gpm to prevent vortexing at the SDC suction line in Mode 5 and when the RCS is drained to the centerline of the reactor vessel hotleg. The changes to TSs 3.1.1.3, 3.1.2.2, 3.1.2.3, 3.1.2.4, 3.1.2.8, 4.1.1.3, 4.1.2.3, and 4.1.2.4 are to alleviate the conflict and to provide added assurance that the boron dilution analysis remains bounding when the SDC flow rates are reduced to prevent vortexing. The changes to TS 3/4.1.2.3 were discussed in the previous section.

TS 3/4.1.1.3 proposes to reduce the minimum RCS flow rate from 3000 gpm to 1000 gpm. The lower flow limit allows operation at lower flow rates during mid-loop - when vortexing is of great concern. This lower flow rate was included in the revised boron dilution analysis. The licensee indicated that although the flow reduction reduces the potential mixing during a boron dilution event, the required operator action times are still satisfied.

TS 3.1.2.2 and 3.1.2.8 increase the shutdown margin from the current 1% to 3.6% ΔK/K. The licensee proposes to change these TSs to make them consistent with the Core Operating Limits Report and provide additional margin in a boron dilution event. The 3.6% ΔK/K was included in the boron dilution reanalysis.

These changes satisfy the conflicting requirements of the previous boron dilution analysis and the operating procedures. Since this change imposes a greater restriction on the licensee than the current TS and the boron dilution analysis remains bounding, the TS changes are acceptable.

2.4 Shutdown Risk

Included with these TS changes are proposed TS changes based on the recommendations of NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," and Millstone's self-assessment of unit practices with respect to minimizing shutdown risks. TS changes 3/4.1.1.3, 3/4.1.2.1, and 3/4.1.2.3, which were discussed in previous sections, fall in this category.

TS 3.5.3 and 4.3.5.2 propose to modify Millstone's method of securing an inoperable HPSI pump. The current method of isolating an inoperable HPSI is enhanced by an added step of key locking a discharge valve downstream of the HPSI pump and tagging the valve in the closed position. As indicated by the licensee, the improved method will ensure that (1) flow can readily be restored from the control room and (2) inadvertent actuation is lessened by requiring the operator to obtain the key from the shift supervisor.

TS 4.8.9.1 proposes to impose a minimum RCS flow rate of ≥ 1000 gpm when a reduction in boron concentration is made. This will lessen the chance of vortexing occurring in the intake line, and therefore, lessen the occurrence of a loss of shutdown cooling event.

The licensee has included a number of TS changes that modify both operation and surveillance requirements. The licensee proposed to adopt the recommendations of GL 90-06 with regard to LTOP and improved reliability of PORVs and their associated block valves. The licensee also included the TS and surveillance modifications that would correct a conflict in the current operating requirements of the shutdown cooling system and the boron dilution analysis. Finally, the licensee incorporated the recommendations of NUMARC 91-06 with regards to minimizing shutdown risk.

The staff finds the licensee's proposed TS changes acceptable because (1) the changes proposed by the licensee impose greater operating restrictions on the plant operation, (2) the licensee is proposing to implement the guidance of GL 90-06 and IN 93-50, which will improve LTOP reliability, and (3) the reanalyzed boron dilution event remains bounding.

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 (59 FR 27060). 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: S. Brewer

Date: February 15, 1995