

August 7, 2002

Mr. J. A. Price
Vice President - Nuclear Technical Services - Millstone
Dominion Nuclear Connecticut, Inc.
c/o Mr. David A. Smith
Rope Ferry Road
Waterford, CT 06385

SUBJECT: MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2 - ISSUANCE OF
AMENDMENT RE: SAFETY INJECTION TANKS (TAC NO. MB2859)

Dear Mr. Price:

The Commission has issued the enclosed Amendment No. 268 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2 (MP2), in response to your application dated August 28, 2001.

The amendment revises MP2 Technical Specification (TS) 3/4.5.1, "Safety Injection Tanks (SITs)" to delete surveillance requirement (SR) 4.5.1.f. This SR provided verification of the automatic opening features of the SIT outlet isolation valves.

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,

/RA/

Richard B. Ennis, Senior Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 268 to DPR-65
2. Safety Evaluation

cc w/encls: See next page

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DOMINION NUCLEAR CONNECTICUT, INC.

DOCKET NO. 50-336

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 268
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the applicant dated August 28, 2001, 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. 268 , 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, and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Jacob I. Zimmerman, Acting Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: August 7, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 268

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Replace the following page of the Appendix A, Technical Specifications, with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove

3/4 5-2

Insert

3/4 5-2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 268

TO FACILITY OPERATING LICENSE NO. DPR-65

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By application dated August 28, 2001, Dominion Nuclear Connecticut, Inc., (the licensee), requested a change to the Millstone Nuclear Power Station, Unit No. 2 (MP2) Technical Specifications (TSs). The proposed change would revise TS 3/4.5.1, "Safety Injection Tanks (SITs)" to delete the surveillance requirement (SR) that provides verification of the automatic opening features of the SIT outlet isolation valves. Specifically, the proposed change would delete SR 4.5.1.f which reads as follows:

- f. Verify that the SIT isolation valves open automatically before the Reactor Coolant System pressure exceeds 1750 psia and on a safety injection signal at least once per 18 months.

2.0 REGULATORY EVALUATION

As discussed in Section 6.3 of the MP2 Final Safety Analysis Report (FSAR), the safety injection system (i.e., emergency core cooling system) is designed to provide core cooling in the event of a loss-of-coolant accident (LOCA) for all breaks in the reactor coolant system (RCS) piping up to and including the equivalent of a double-ended break in the largest coolant pipe. The design of the safety injection system is such that its calculated cooling performance following postulated LOCAs satisfies the criteria specified in paragraph (b) of Section 50.46 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.46), "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors."

The acceptance criteria specified in 10 CFR 50.46(b) include the following:

- (1) *Peak cladding temperature.* The calculated maximum fuel element cladding temperature shall not exceed 2,200 °F.
- (2) *Maximum cladding oxidation.* The calculated total oxidation of the cladding shall nowhere exceed 0.17 times the total cladding thickness before oxidation.

- (3) *Maximum hydrogen generation.* The calculated total amount of hydrogen generated from the chemical reaction of the cladding with water or steam shall not exceed 0.01 times the hypothetical amount that would be generated if all the metal in the cladding cylinders surrounding the fuel, excluding the cladding surrounding the plenum volume, were to react.
- (4) *Coolable geometry.* Calculated changes in core geometry shall be such that the core remains amenable to cooling.
- (5) *Long-term cooling.* After any calculated successful initial operation of the emergency core cooling system (ECCS), the calculated core temperature shall be maintained at an acceptably low value and decay heat shall be removed for the extended period of time required by the long-lived radioactivity remaining in the core.

The MP2 safety injection system consists of: (1) the High Pressure Coolant Injection (HPCI) subsystem; (2) the Low Pressure Coolant Injection (LPCI) subsystem; and (3) the SIT subsystem. The SIT subsystem consists of four tanks, each of which is piped to one of the four RCS cold legs. Each SIT is partially filled with borated water and is pressurized with nitrogen gas at a minimum pressure of 200 pounds per square inch gauge (psig). The SITs function is to flood the core following a depressurization of the RCS as a result of a LOCA. The SITs are passive components since no operator action or control signal is required for them to perform their function. As RCS pressure falls below tank pressure, check valves open in the line connecting each tank to the RCS. Internal tank pressure is sufficient to discharge the contents of the SITs to the RCS. The tank gas/water fractions, gas pressure, and outlet pipe size are designed to ensure that sufficient safety injection is available such that the 10 CFR 50.46 acceptance criteria are met for all postulated LOCAs.

Each SIT is equipped with a remotely operated motor-operated valve (MOV) on its outlet piping. These normally open MOVs are used to isolate the tanks during a normal depressurization of the RCS. Signals are provided to open any of the SIT outlet isolation valves on a safety injection actuation system (SIAS), or when the RCS pressure during plant heatup increases to approximately 280 psig. The position of the SIT outlet isolation valves is displayed by the use of lights on the main control boards. In addition, an alarm is annunciated if any of these valves are closed.

The licensee's submittal proposed to delete SR 4.5.1.f which currently requires periodic verification of the automatic opening features of the SIT outlet isolation valves. The submittal stated that this SR is not necessary since these valves are already required to be deenergized in the open position when the SITs are required to be operable.

3.0 TECHNICAL EVALUATION

The MP2 accident analysis for a design-basis LOCA is described in FSAR Section 14.6.5. Both the large and small break LOCA analyses take credit for the SITs. Operability of the SITs ensures that, in conjunction with the LPCI and HPCI subsystems, sufficient core cooling is available such that the consequences of a design-basis LOCA are within the ECCS acceptance criteria of 10 CFR 50.46.

Limiting Condition for Operation (LCO) 3.5.1 requires that all four SITs be operable whenever the plant is in Modes 1, 2, or 3, with pressurizer pressure greater than or equal to 1,750 psia. Under these conditions, each SIT is considered operable when the following conditions exist:

- 1) The volume of water in the SIT is within the assumed band;
- 2) The boron concentration of the water in the SIT is at or above the minimum assumed concentration;
- 3) The nitrogen cover gas pressure in the SIT is within the assumed band; and
- 4) The SIT outlet isolation valve is open with power to the valve operator removed.

As discussed in the Bases for TS 3/4.5.1, the LCO requirements for SIT volume, boron concentration, and nitrogen cover gas pressure ensure that the assumptions used for SIT injection in the accident analyses are met.

The LCO requirement that the SIT outlet isolation valve be open with power to the valve operator removed prevents inadvertent valve closure during periods when the SIT is required to be operable. This precaution helps ensure that the SIT is available to perform its function of flooding the core following a depressurization of the RCS as a result of a LOCA.

Existing SR 4.5.1.a requires verification, at least once per 12 hours, that each SIT outlet isolation valve is fully open. This SR ensures that the SITs are available for injection and ensures timely discovery if a valve should be partially or fully closed. Although an MOV should not change position with power removed, a partially or fully closed SIT outlet isolation valve could result in not meeting the LOCA accident analysis assumptions. The 12-hour frequency is considered reasonable in view of the administrative controls (e.g., removal of power to valve operator) that ensure the unlikelihood of a mis-positioned isolation valve.

Existing SR 4.5.1.e requires verification, at least once per 31 days, that the closing coil in the valve breaker cubicle has been removed for each SIT outlet isolation valve. This SR ensures that an active failure could not result in an undetected closure of any of the isolation valves.

Existing SR 4.5.1.f, which the licensee has proposed to delete, requires verification, at least once per 18 months, that the SIT isolation valves open automatically before the RCS pressure exceeds 1,750 psia and on an SIAS signal. The licensee's application stated that periodic verification of the automatic opening features is not necessary because: (1) the valves are already required to be deenergized in the open position when the SITs are required to be operable; (2) the valves are verified to be open every 12 hours by SR 4.5.1a; and (3) the valves are verified to be in a plant configuration that does not allow the valves to be closed every 31 days by SR 4.5.1.e (i.e., closing coils removed).

The staff finds that the existing LCO 3.5.1 requirement that the SIT outlet isolation valves be open with power to their valve operators removed under conditions when the SIT is required to be operable, along with the verification provided by existing SRs 4.5.1.a and 4.5.1.e, provides reasonable assurance that the SIT outlet isolation valves will be open when the SITs are required to provide their LOCA mitigation function. Therefore, the staff concludes that the proposed deletion of SR 4.5.1.f is acceptable since it will have no adverse impact on the ability of the SITs to provide core cooling as assumed in the MP2 accident analyses for a design-basis

LOCA. The deletion of SR 4.5.1.f is consistent with NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants," Revision 2.

4.0 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.

5.0 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 (66 FR 55010). 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.

6.0 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: R. Ennis

Date: August 7, 2002