

Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385



DominionSM

AUG 28 2001

Docket No. 50-336
B18449

RE: 10 CFR 50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Nuclear Power Station, Unit No. 2
Technical Specifications Change Request 2-12-01
Safety Injection Tanks

Pursuant to 10 CFR 50.90, Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed change into the Technical Specifications of Millstone Unit No. 2. DNC is proposing to change Technical Specification 3.5.1, "Emergency Core Cooling Systems (ECCS) – Safety Injection Tanks (SITs)."

The proposed Technical Specification change will remove the surveillance requirement that verifies the automatic opening features of the safety injection tank (SIT) outlet isolation valves. Periodic verification of the automatic opening features is not necessary since these valves are already required to be deenergized in the open position when the SITs are required to be operable.

Attachment 1 provides a discussion of the proposed changes and the Safety Summary. Attachment 2 provides the Significant Hazards Consideration. Attachment 3 provides the marked-up version of the appropriate page of the current Technical Specifications. Attachment 4 provides the retyped page of the Technical Specifications.

Environmental Considerations

DNC has evaluated the proposed change against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.22. DNC has determined that the proposed change meets the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92(b). This determination is based on the fact that the change is being proposed as an amendment to a license issued pursuant to 10 CFR 50 that changes a surveillance requirement, and that the amendment request meets the following specific criteria.

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- (i) The proposed change involves no significant hazards consideration.

As demonstrated in Attachment 2, the proposed change does not involve a significant hazards consideration.

- (ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released off site.

The proposed change will remove a surveillance requirement that verifies the automatic opening features of the SIT outlet isolation valves. Periodic verification of the automatic opening features is not necessary since these valves are already required to be deenergized in the open position when the SITs are required to be operable. The proposed change will not result in an increase in power level, will not increase the production of radioactive waste and byproducts, and will not alter the flowpath or method of disposal of radioactive waste or byproducts. Therefore, the proposed change will not increase the type and amounts of effluents that may be released off site.

- (iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed change to remove a surveillance requirement that verifies the automatic opening features of the SIT outlet isolation valves will not result in changes in the configuration of the facility. These valves are already required to be deenergized in the open position when the SITs are required to be operable. There will be no change in the level of controls or methodology used for processing radioactive effluents or the handling of solid radioactive waste. There will be no change to the normal radiation levels within the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from the proposed change.

Conclusions

The proposed change does not involve a significant impact on public health and safety (see the Safety Summary provided in Attachment 1), and does not involve a Significant Hazards Consideration pursuant to the provisions of 10 CFR 50.92 (see the Significant Hazards Consideration provided in Attachment 2). In addition, we have concluded the proposed change is safe.

Site Operations Review Committee and Nuclear Safety Assessment Board

The Site Operations Review Committee and Nuclear Safety Assessment Board have reviewed and concurred with the determinations.

Schedule

We request issuance of this amendment for Millstone Unit No. 2 prior to April 30, 2002, with the amendment to be implemented within 30 days of issuance.

State Notification

In accordance with 10 CFR 50.91(b), a copy of this License Amendment Request is being provided to the State of Connecticut.

There are no regulatory commitments contained within this letter.

If you should have any questions on the above, please contact Mr. Ravi Joshi at (860) 440-2080.

Very truly yours,

DOMINION NUCLEAR CONNECTICUT, INC.



J. Alan Price, Vice President
Nuclear Technical Services - Millstone

Sworn to and subscribed before me

this 28th day of AUGUST, 2001



Notary Public

My Commission expires FEB. 28, 2006

Attachments (4)

cc: H. J. Miller, Region I Administrator
J. T. Harrison, NRC Project Manager, Millstone Unit No. 2
NRC Senior Resident Inspector, Millstone Unit No. 2

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

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Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Technical Specifications Change Request 2-12-01
Safety Injection Tanks

Discussion of Proposed Changes and Safety Summary

Technical Specifications Change Request 2-12-01
Safety Injection Tanks
Discussion of Proposed Changes and Safety Summary

Introduction

Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed change into the Technical Specifications of Millstone Unit No. 2. DNC is proposing to change Technical Specification 3.5.1, "Emergency Core Cooling Systems (ECCS) – Safety Injection Tanks (SITs)."

The proposed Technical Specification change will remove the surveillance requirement that verifies the automatic opening features of the safety injection tank (SIT) outlet isolation valves. Periodic verification of the automatic opening features is not necessary since these valves are already required to be deenergized in the open position when the SITs are required to be operable.

Technical Specification Change

Technical Specification 3.5.1 will be modified by removing Surveillance Requirement (SR) 4.5.1.f. This requirement, which verifies the SIT outlet isolation valves open automatically based on Reactor Coolant System (RCS) pressure and on a Safety Injection Actuation Signal (SIAS), is not necessary. The SIT outlet isolation valves are verified open every 12 hours by SR 4.5.1.a, and 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 (closing coils removed).

Safety Summary

DNC has evaluated the impact on plant safety of the proposed change. The proposed removal of SR 4.5.1.f, which verifies the SIT outlet isolation valves open automatically based on RCS pressure and on a SIAS, will have no adverse impact on the SIT accident mitigation function. The SIT outlet isolation valves are verified open every 12 hours by SR 4.5.1.a, and 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 (closing coils removed). These additional requirements provide adequate assurance the SITs will be available when required. In addition, the removal of this redundant requirement is consistent with NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants," Revision 2, April 2001.

The proposed change to the Technical Specifications will not adversely affect the availability or operation of the equipment used to mitigate the design basis accidents. The remaining Technical Specification requirement to deenergize the SIT outlet isolation valves in the open position when the SITs are required to be operable will ensure the SITs will be available if needed for accident mitigation. There will be no adverse effect on plant operation, and the plant response to the design basis accidents will not change. Therefore, there will be no adverse impact on public health and safety. Thus, the proposed change is safe.

Attachment 2

Millstone Nuclear Power Station, Unit No. 2

Technical Specifications Change Request 2-12-01
Safety Injection Tanks
Significant Hazards Consideration

Technical Specifications Change Request 2-12-01
Safety Injection Tanks
Significant Hazards Consideration

Description of License Amendment Request

Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to revise the Millstone Unit No. 2 Technical Specifications as described in this License Amendment Request. The proposed Technical Specification change will remove the surveillance requirement that verifies the automatic opening features of the safety injection tank outlet isolation valves. Periodic verification of the automatic opening features is not necessary since these valves are already required to be deenergized in the open position when the safety injection tanks are required to be operable.

Basis for No Significant Hazards Consideration

In accordance with 10 CFR 50.92, DNC has reviewed the proposed change and has concluded that it does not involve a Significant Hazards Consideration (SHC). The basis for this conclusion is that the three criteria of 10 CFR 50.92(c) are not compromised. The proposed change does not involve an SHC because the changes do not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed Technical Specification change to remove the surveillance requirement that verifies the automatic opening features of the safety injection tank outlet isolation valves will not cause an accident to occur since the safety injection tanks and associated isolation valves are not accident initiators. In addition, the proposed change will not alter the operation of the associated accident mitigation equipment. The operability requirement for the safety injection tank outlet isolation valves to be deenergized open when the safety injection tanks are required to be operable will not be affected, and outlet isolation valve position will still be verified periodically. As a result, the design basis accidents will remain the same postulated events described in the Millstone Unit No. 2 Final Safety Analysis Report, and the consequences of the design basis accidents will remain the same. Therefore, the proposed change will not increase the probability or consequences of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed Technical Specification change does not impact any system or component that could cause an accident. The proposed change will not alter the plant configuration (no new or different type of equipment will be installed) or require any unusual operator actions. The proposed change will not alter the way any structure, system, or component functions, and will not significantly alter the manner in which the plant is operated. The response of the plant and the operators following an accident will not be different. In addition, the proposed change does not introduce any new failure modes. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously analyzed.

3. Involve a significant reduction in a margin of safety.

The proposed Technical Specification change to remove the surveillance requirement that verifies the automatic opening features of the safety injection tank outlet isolation valves will not cause an accident to occur and will not result in any change in the operation of the associated accident mitigation equipment. The proposed change will not revise the operability requirement for the safety injection tank outlet isolation valves to be deenergized open when the safety injection tanks are required to be operable. The safety injection tanks will continue to be able to mitigate the design basis accidents as assumed in the safety analysis. In addition, the proposed change will not adversely affect equipment design or operation, and there are no changes being made to the Technical Specification required safety limits or safety system settings that would adversely affect plant safety. Therefore, the proposed change will not result in a reduction in a margin of safety.

Attachment 3

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Safety Injection Tanks
Marked Up Page

Technical Specifications Change Request 2-12-01
Safety Injection Tanks
Marked Up Page

A change to the following Technical Specification page has been proposed.

Technical Specification Section Number	Title of Section	Page and Revision Numbers
3/4.5.1	Emergency Core Cooling Systems (ECCS) - Safety Injection Tanks (SITs)	3/4 5-2 Amend. 221

SAFETY INJECTION TANKS (SITs)

**NO CHANGE
FOR INFORMATION ONLY**

LIMITING CONDITION FOR OPERATION

- 3.5.1 Each reactor coolant system SIT shall be OPERABLE with:
- a. The isolation valve open and the power to the valve operator removed,
 - b. Between 1080 and 1190 cubic feet of borated water,
 - c. A minimum boron concentration of 1720 PPM, and
 - d. A nitrogen cover-pressure of between 200 and 250 psig.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

- a. With one SIT inoperable due to boron concentration not within limits, restore boron concentration to within limits within 72 hours.
- b. With one SIT inoperable due solely to inability to verify level or pressure, restore SIT to OPERABLE status within 72 hours.
- c. With one SIT inoperable, except as a result of boron concentration not within limits or inoperable level or pressure instrumentation, restore SIT to OPERABLE status within 24 hours.
- d. With required ACTION a. or b. or c. and associated Completion Time not met:
 1. Be in MODE 3 within 6 hours, and
 2. Reduce pressurizer pressure to < 1750 psia within 12 hours.
- e. With two or more SITs inoperable, immediately enter LCO 3.0.3.

*With pressurizer pressure \geq 1750 psia.

SAFETY INJECTION TANKS (Continued)SURVEILLANCE REQUIREMENTS

- 4.5.1 Each SIT shall be demonstrated OPERABLE:
- a. Verify each SIT isolation valve is fully open at least once per 12 hours.⁽¹⁾
 - b. Verify borated water volume in each SIT is ≥ 1080 cubic feet and ≤ 1190 cubic feet at least once per 12 hours.⁽²⁾
 - c. Verify nitrogen cover-pressure in each SIT is ≥ 200 psig and ≤ 250 psig at least once per 12 hours.⁽³⁾
 - d. Verify boron concentration in each SIT is ≥ 1720 ppm at least once per 6 months, and once within 6 hours after each solution volume increase of $\geq 1\%$ of tank volume⁽⁴⁾ that is not the result of addition from the refueling water storage tank.
 - e. Verify that the closing coil in the valve breaker cubicle is removed at least once per 31 days.
 - 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.

- (1) If one SIT is inoperable, except as a result of boron concentration not within limits or inoperable level or pressure instrumentation, surveillance is not applicable to the affected SIT.
- (2) If one SIT is inoperable due solely to inoperable water level instrumentation, surveillance is not applicable to the affected SIT.
- (3) If one SIT is inoperable due solely to inoperable pressure instrumentation, surveillance is not applicable to affected SIT.
- (4) Only required to be performed for affected SIT.

BASES

**NO CHANGE
FOR INFORMATION ONLY**

3/4.5.1 SAFETY INJECTION TANKS

The OPERABILITY of each of the RCS SITs ensures that a sufficient volume of borated water will be immediately forced into the reactor core through each of the cold legs in the event the RCS pressure falls below the pressure of the SITs. This initial surge of water into the core provides the initial cooling mechanism during large RCS pipe ruptures.

The limits on SIT volume, boron concentration and pressure ensure that the assumptions used for SIT injection in the accident analysis are met.

If the boron concentration of one SIT is not within limits, it must be returned to within the limits within 72 hours. In this condition, ability to maintain subcriticality or minimum boron precipitation time may be reduced, but the reduced concentration effects on core subcriticality during reflood are minor. Boiling of the ECCS water in the core during reflood concentrates the boron in the saturated liquid that remains in the core. In addition, the volume of the SIT is still available for injection. Since the boron requirements are based on the average boron concentration of the total volume of three SITs, the consequences are less severe than they would be if a SIT were not available for injection. Thus, 72 hours is allowed to return the boron concentration to within limits.

If one SIT is inoperable, for a reason other than boron concentration or the inoperability of water level or pressure channel instrumentation, the SIT must be returned to OPERABLE status within 24 hours. In this condition, the required contents of three SITs cannot be assumed to reach the core during a LOCA as is assumed in Appendix K to 10CFR50.

Reference 1 provides a series of deterministic and probabilistic analysis findings that support 24 hours as being either "risk beneficial" or "risk neutral" in comparison to shorter periods for restoring the SIT to OPERABLE status. Reference 1 discusses recent best-estimate analysis that confirmed that for large-break LOCAs, core melt can be prevented by either operation of one LPSI pump or the operation of one HPSI pump and a single SIT. Reference 1 also discusses plant-specific probabilistic analysis that evaluated the risk-impact of the 24 hour recovery period in comparison to shorter recovery periods.

If the SIT cannot be restored to OPERABLE status within the associated completion time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3

Reference

- 1 CE NPSD-994, "CEOG Joint Applications Report on Safety Injection Tank AOT/SIT Extension," April 1995.

BASES

NO CHANGE
FOR INFORMATION ONLY

3/4.5.1 SAFETY INJECTION TANKS (continued)

within 6 hours and pressurizer pressure reduced to < 1750 psia within 12 hours. The allowed completion times are reasonable, based on operating experience, to reach the required plant condition from full power conditions in an orderly manner and without challenging plant systems.

If more than one SIT is inoperable, the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two separate and independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the safety injection tanks is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward.

The ECCS leak rate surveillance requirements assure that the leakage rates assumed for the system outside containment during the recirculation phase will not be exceeded.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the accident analyses are met and that subsystem OPERABILITY is maintained. The purpose of the HPSI and LPSI pumps differential pressure test on recirculation ensures that the pump(s) have not degraded to a point where the accident analysis would be adversely impacted.

The acceptance criteria for the HPSI pumps Technical Specification Surveillance Requirement (SR 4.5.2.a.1.b), a minimum pump recirculation flow test, was developed assuming a 5% degraded pump using the manufacturer curves. The associated accident analyses assume a HPSI flow that represents 5% degradation. Early delivery of HPSI pump flow, at high head conditions similar to those established when the pump is on recirculation flow, is an important assumption in the accident analyses. Flow measurement instrument inaccuracy has been accounted for in the design basis hydraulic analysis. Pressure measurement instrument inaccuracy will be accounted for in the acceptance criteria contained in the surveillance procedure for SR 4.5.2.a.1.b. Pressure measurement instrument inaccuracy is not reflected in the Technical Specification acceptance criteria.

The acceptance criteria for the LPSI pumps Technical Specification Surveillance Requirement (SR 4.5.2.a.2.b) was developed assuming a 10% degraded pump from the actual pump curves. The associated accident analyses assume a LPSI flow that represents 10% degradation. For the limiting large

Attachment 4

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Safety Injection Tanks
Retyped Page

EMERGENCY CORE COOLING SYSTEMS

SAFETY INJECTION TANKS (Continued)

SURVEILLANCE REQUIREMENTS

- 4.5.1 Each SIT shall be demonstrated OPERABLE:
- a. Verify each SIT isolation valve is fully open at least once per 12 hours.⁽¹⁾
 - b. Verify borated water volume in each SIT is ≥ 1080 cubic feet and ≤ 1190 cubic feet at least once per 12 hours.⁽²⁾
 - c. Verify nitrogen cover-pressure in each SIT is ≥ 200 psig and ≤ 250 psig at least once per 12 hours.⁽³⁾
 - d. Verify boron concentration in each SIT is ≥ 1720 ppm at least once per 6 months, and once within 6 hours after each solution volume increase of $\geq 1\%$ of tank volume⁽⁴⁾ that is not the result of addition from the refueling water storage tank.
 - e. Verify that the closing coil in the valve breaker cubicle is removed at least once per 31 days.

(1) If one SIT is inoperable, except as a result of boron concentration not within limits or inoperable level or pressure instrumentation, surveillance is not applicable to the affected SIT.

(2) If one SIT is inoperable due solely to inoperable water level instrumentation, surveillance is not applicable to the affected SIT.

(3) If one SIT is inoperable due solely to inoperable pressure instrumentation, surveillance is not applicable to affected SIT.

(4) Only required to be performed for affected SIT.