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Millstone Power Station
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Dominion

July 19, 2004

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

Serial No. 04-399
NL&OS/PRW R0
Docket No. 50-336
License No. DPR-65

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 2
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
BORATION, EMERGENCY CORE COOLING, CONTAINMENT SPRAY AND COOLING AND AUXILIARY FEEDWATER SYSTEMS

By a letter dated May 7, 2002, Dominion Nuclear Connecticut, Inc. (DNC) proposed to amend Operating License DPR-65 by incorporating changes into the Millstone Unit 2 Technical Specifications. The proposed changes would relocate the Boration System Technical Specification requirements to the Technical Requirements Manual, relocate boron dilution analysis restrictions within Technical Specifications, and revise the Technical Specification Limiting Condition for Operation (LCO) action, and surveillance requirements associated with the Emergency Core Cooling, Containment Spray and Cooling and Auxiliary Feedwater Systems.

In conference calls on June 16, 2004 and June 23, 2004, the NRC staff requested additional clarifications to certain statements in the amendment request. The requested clarifications are as follows:

1. The discussion in Attachment 1 of the May 7, 2002 DNC submittal states, "Automatic valves that are not required to change position are classified as passive valves by the IST Program and are not required to be cycled." The referenced statement was made in support of the elimination of requirements to cycle "...each testable, automatically operated valve..." for the ECCS, Containment Spray, and Auxiliary Feedwater systems found in technical specifications specific to those systems, e.g., surveillance requirement 4.5.2.a.6 for ECCS. The testing is being eliminated in favor of testing to the requirements of Section XI of the ASME Code which is currently required by TS 4.0.5. Millstone 2 has historically stroke tested all testable power operated valves, regardless of whether the valve has an "automatic" function. Current testing goes beyond what is required by the Improved Technical Specifications (ITS) as well as Section XI of the Code.

As stated in our application, there will be a reduction in the number of valves tested in the manner described by the current surveillance requirement. This is due to our ongoing efforts to align our test program with the requirements of ITS and is consistent with ASME Section XI as well. It should be noted however, that valves no longer subject to stroke time testing remain within the scope of the ASME Section XI program and are subject to testing consistent with their specified functional requirements.

2. In the discussion in Insert J to page B 3/4 5-2 of the Bases regarding:

   a. Risk significance of the charging pumps

      The wording in the second paragraph of Page 1 is changed from:

      "However, the charging pumps are risk significant equipment (10 CFR 50.36(c)(2)(ii) Criterion 4) due to their role in the mitigation of two beyond design basis events, Anticipated Transient Without Scram (ATWS) and Complete Loss of Secondary Heat Sink. Mitigation of these events relies on the charging pumps to provide flow to the RCS. Therefore, requirements for charging pump operability will be retained in Technical Specification 3.5.2 to ensure the charging pumps will be available to supply borated water from the RWST to the Reactor Coolant System."

      to

      "In addition, risk evaluations have been performed to demonstrate that the charging system is not risk significant as defined in 10 CFR 50.36(c)(2)(ii) Criterion 4. However, the charging system is credited in the PRA model for mitigating two beyond design basis events, Anticipated Transients Without Scram (ATWS) and Complete Loss of Secondary Heat Sink. On this basis, the requirements for charging pump operability will be retained in Technical Specification 3.5.2. Consistent with the surveillance requirements, only the charging pump will be included in determining ECCS subsystem operability."

   b. Operability of charging pumps

      Following the second paragraph on Page 1, the following paragraph is added:

      "As a result of the risk insight, the charging pump will be included as an Emergency Core Cooling System subsystem required by Technical Specification 3.5.2. That is, an ECCS subsystem will include one OPERABLE charging pump. The charging pump credited for each ECCS subsystem must meet the surveillance requirements specified in Section 4.5.2. Consistent with the risk insights, automatic start of the charging pump is not required for compliance to TS 3.5.2. Thus, Section 4.5.2 does not

specify any testing requirements for the automatic start of the credited charging pump. Similarly, since the ECCS flow path is not credited in the risk evaluation, there are no charging flow path requirements included in TS 3.5.2."

c. How surveillance testing is accomplished for the charging pumps (positive displacement pumps).

The second sentence in the third paragraph of Page 2 is changed from:

"For positive displacement pumps, this type of testing may be accomplished by measuring the pump flow at a specified discharge pressure, consistent with the pump characteristic curve."

to

"For positive displacement pumps, this type of testing may be accomplished by comparing the measured pump flow, discharge pressure and vibration to their respective acceptance criteria. Acceptance criteria are verified to bound the assumptions utilized in accident analyses."

d. The bases for the 18 month frequency for the inspection of containment sump.

The second sentence in the third paragraph of Page 3 is changed from:

"The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during an outage, on the need to have access to the location, and on the potential for unplanned transients if the surveillance were performed with the reactor at power."

to

"The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during an outage, and the need to have access to the location."

Attachment 1 contains the revised Insert J to Page B 3/4 5-2 of the bases.

If you have any questions or require additional information, please contact Mr. Paul R. Willoughby at (804) 273-3572.

Very truly yours,

Leslie N. Hartz
Vice President – Nuclear Engineering

Attachments: (1)

Commitments made in this letter: None.

cc: U.S. Nuclear Regulatory Commission
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Millstone Power Station

SN: 04-399
Docket Nos.: 50-336
Subject: RAI – Boration, Emerg. Core Cooling,
Containment Spray & Cooling & Aux. FW Systems
Proposed TS Change

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Leslie N. Hartz, who is Vice President - Nuclear Engineering, of Dominion Nuclear Connecticut, Inc. She has affirmed before me that she is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of her knowledge and belief.

Acknowledged before me this 19th day of July, 2004.

My Commission Expires: March 31, 2008.

Notary Public

(SEAL)

ATTACHMENT 1

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LICENSE BASIS DOCUMENT CHANGE REQUEST (LBDCR) 2-5-00, BORATION, EMERGENCY CORE COOLING, CONTAINMENT SPRAY AND COOLING AND AUXILIARY FEEDWATER SYSTEMS

REVISED INSERT J TO PAGE B 3/4 5-2 OF THE BASES

INSERT J - Page B 3/4 5-2 (Page 1 of 4)

Each Emergency Core Cooling System (ECCS) subsystem required by Technical Specification 3.5.2 for design basis accident mitigation includes an OPERABLE high pressure safety injection (HPSI) pump and a low pressure safety injection (LPSI) pump. Each of these pumps requires an OPERABLE flow path capable of taking suction from the refueling water storage tank (RWST) on a safety injection actuation signal (SIAS). Upon depletion of the inventory in the RWST, as indicated by the generation of a Sump Recirculation Actuation Signal (SRAS), the suction for the HPSI pumps will automatically be transferred to the containment sump. The SRAS will also secure the LPSI pumps. The ECCS subsystems satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii) as design basis accident mitigation equipment.

Flow from the charging pumps is no longer required for design basis accident mitigation. The loss of coolant accident analysis has been revised and no credit is taken for charging pump flow. As a result, the charging pumps no longer meet the first three criteria of 10CFR 50.36 (c)(2)(ii) as design basis accident mitigation equipment required to be controlled by Technical Specifications. In addition, risk evaluations have been performed to demonstrate that the charging system is not risk significant as defined in 10CFR 50.36(c)(2)(ii) Criterion 4. However, the charging system is credited in the PRA model for mitigating two beyond design basis events, Anticipated Transients Without Scram (ATWS) and Complete Loss of Secondary Heat Sink. On this basis, the requirements for charging pump operability will be retained in Technical Specification 3.5.2. Consistent with the surveillance requirements, only the charging pump will be included in determining ECCS subsystem operability.

As a result of the risk insight, the charging pump will be included as an Emergency Core Cooling System subsystem required by Technical Specification 3.5.2. That is, an ECCS subsystem will include one OPERABLE charging pump. The charging pump credited for each ECCS subsystem must meet the surveillance requirements specified in Section 4.5.2. Consistent with the risk insights, automatic start of the charging pump is not required for compliance to TS 3.5.2. Thus, Section 4.5.2 does not specify any testing requirements for the automatic start of the credited charging pump. Similarly, since the ECCS flow path is not credited in the risk evaluation, there are no charging flow path requirements included in TS 3.5.2.

The requirements for automatic actuation of the charging pumps and the associated boration system components (boric acid pumps, gravity feed valves, boric acid flow path valves), which align the boric acid storage tanks to the charging pump suction on a SIAS have been relocated to the Technical Requirements Manual. These relocated requirements do not affect the OPERABILITY of the charging pumps for Technical Specification 3.5.2.

Surveillance Requirement 4.5.2.a verifies the correct alignment for manual, power operated, and automatic valves in the ECCS flow paths to provide assurance that the proper flow paths will exist for ECCS operation. This surveillance does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an actuation signal is allowed to be in a nonaccident position provided the valve automatically repositions within the proper stroke time. This surveillance does not require any testing or valve manipulation. Rather, it involves verification that those valves capable of being mispositioned are in the correct position. The 31 day frequency is appropriate because the valves are operated under procedural control and an improper valve position would only affect a single train. This frequency has been shown to be acceptable through operating experience.

Surveillance Requirement 4.5.2.b verifies proper valve position to ensure that the flow path from the ECCS pumps to the RCS is maintained. Misalignment of these valves could render both ECCS trains inoperable. Securing these valves in position by removing power to the valve operator ensures that the valves cannot be inadvertently misaligned or change position as the result of an active failure. A 31 day frequency is considered reasonable in view of other administrative controls ensuring that a mispositioned valve is an unlikely possibility.

Surveillance Requirements 4.5.2.c and 4.5.2.d, which address periodic surveillance testing of the ECCS pumps (high pressure and low pressure safety injection pumps) to detect gross degradation caused by impeller structural damage or other hydraulic component problems, is required by Section XI of the ASME Code. This type of testing may be accomplished by measuring the pump developed head at only one point of the pump characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the unit safety analysis. The surveillance requirements are specified in the Inservice Testing Program, which encompasses Section XI of the ASME Code. Section XI of the ASME Code provides the activities and frequencies necessary to satisfy the requirements.

Surveillance Requirement 4.5.2.e, which addresses periodic surveillance testing of the charging pumps to detect gross degradation caused by hydraulic component problems, is required by Section XI of the ASME Code. For positive displacement pumps, this type of testing may be accomplished by comparing the measured pump flow, discharge pressure and vibration to their respective acceptance criteria. Acceptance criteria are verified to bound the assumptions utilized in accident analyses. This verifies both that the measured performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test point is greater than or equal to the performance assumed for mitigation of the beyond design basis events. The surveillance requirements are specified in the Inservice Testing Program, which

encompasses Section XI of the ASME Code. Section XI of the ASME Code provides the activities and frequencies necessary to satisfy the requirements.

Surveillance Requirements 4.5.2.f, 4.5.2.g, and 4.5.2.h demonstrate that each automatic ECCS flow path valve actuates to the required position on an actual or simulated actuation signal (SIAS or SRAS), that each ECCS pump starts on receipt of an actual or simulated actuation signal (SIAS), and that the LPSI pumps stop on receipt of an actual or simulated actuation signal (SRAS). This surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month frequency is based on the need to perform these surveillances under the conditions that apply during a plant outage, and the potential for unplanned transients if the surveillances were performed with the reactor at power. The 18 month frequency is also acceptable based on consideration of the design reliability (and confirming operating experience) of the equipment. The actuation logic is tested as part of the Engineered Safety Feature Actuation System (ESFAS) testing, and equipment performance is monitored as part of the Inservice Testing Program.

Surveillance Requirement 4.5.2.i verifies the high and low pressure safety injection valves listed in Table 4.5-1 will align to the required positions on an SIAS for proper ECCS performance. The safety injection valves have stops to position them properly so that flow is restricted to a ruptured cold leg, ensuring that the other cold legs receive at least the required minimum flow. The 18 month frequency is based on the need to perform these surveillances under the conditions that apply during a plant outage and the potential for unplanned transients if the surveillances were performed with the reactor at power. The 18 month frequency is also acceptable based on consideration of the design reliability (and confirming operating experience) of the equipment.

Surveillance Requirement 4.5.2.j addresses periodic inspection of the containment sump to ensure that it is unrestricted and stays in proper operating condition. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during an outage, and the need to have access to the location. This frequency is sufficient to detect abnormal degradation and is confirmed by operating experience.

Surveillance Requirement 4.5.2.k verifies that the Shutdown Cooling (SDC) System open permissive interlock is OPERABLE to ensure the SDC suction isolation valves are prevented from being remotely opened when RCS pressure is at or above the SDC suction design pressure of 300 psia. The suction piping of the SDC pumps (low pressure safety injection pumps) is the SDC component with the limiting design pressure rating. The interlock provides assurance that double isolation of the SDC System from the RCS is preserved whenever RCS pressure is at or above the design pressure. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during an outage. The 18 month frequency is also acceptable based on consideration of the design reliability (and confirming operating experience) of the equipment.

Only one ECCS subsystem is required by Technical Specification 3.5.3 for design basis accident mitigation. This ECCS subsystem requires one OPERABLE HPSI pump and an OPERABLE flow path capable of taking suction from the RWST on a SIAS. Upon depletion of the inventory in the RWST, as indicated by the generation of a SRAS, the suction for the HPSI pump will automatically be transferred to the containment sump. This ECCS subsystem satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) as design basis accident mitigation equipment.

Surveillance Requirement 4.5.3.1 specifies the surveillance requirements of Technical Specification 3.5.2 that are required to demonstrate that the required ECCS subsystem of Technical Specification 3.5.3 is OPERABLE. The required ECCS subsystem of Technical Specification 3.5.3 does not include any LPSI components. LPSI components are not required when Technical Specification 3.5.3 is applicable to allow the LPSI components to be used for SDC System operation.