Dominion Nuclear Connecticut, Inc.
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Dominion®

May 2, 2016

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

Serial No. 16-084A
NRA/WDC R0
Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
SUPPLEMENT TO RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST TO ADOPT DOMINION CORE DESIGN AND SAFETY ANALYSIS METHODS AND TO ADDRESS THE ISSUES IDENTIFIED IN WESTINGHOUSE DOCUMENTS NSAL-09-5, REV. 1, NSAL-15-1, AND 06-IC-03 (CAC NO. MF6251)

By letter dated May 8, 2015, Dominion Nuclear Connecticut, Inc. (DNC) submitted a license amendment request (LAR) for Millstone Power Station Unit 3 (MPS3). The proposed amendment would revise the Technical Specifications (TS) to enable use of the Dominion nuclear safety analysis and reload core design methods for MPS3 and address the issues identified in three Westinghouse communication documents. In a letter dated January 8, 2016, the Nuclear Regulatory Commission (NRC) transmitted a request for additional information (RAI) to DNC related to the LAR. DNC responded to the RAI questions in letters dated January 28 and February 25, 2016. In an email dated February 24, 2016, the NRC transmitted an RAI to DNC related to the content of the TS changes proposed in the LAR. DNC responded to the RAI questions in a letter dated March 23, 2016. In a conference call with the NRC on April 14, 2016, the NRC requested supplemental information to the RAI response for Questions 1 and 2. The attachment to this letter provides the supplemental information.

If you have any questions regarding this submittal, please contact Wanda Craft at (804) 273-4687.

Sincerely,

Mark D. Sartain
Vice President – Nuclear Engineering

Vicki L. Hull
NOTARY PUBLIC
Commonwealth of Virginia
Reg. # 140542
My Commission Expires May 31, 2018

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Mark D. Sartain, who is Vice President – Nuclear Engineering of Dominion Nuclear Connecticut, Inc. He has affirmed before me that he 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 his knowledge and belief.

Acknowledged before me this 2nd day of May, 2016.

My Commission Expires: 5-31-18.

Vicki L. Hull
Notary Public

A001
NRR

Commitments made in this letter: None

Attachment:

Supplement to Response to Request for Additional Information Regarding License Amendment Request to Adopt Dominion Core Design and Safety Analysis Methods and to Address the Issues Identified in Westinghouse Documents NSAL-09-5, Rev. 1, NSAL-15-1, and 06-IC-03 (CAC No. MF6251)

cc: U.S. Nuclear Regulatory Commission
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ATTACHMENT

SUPPLEMENT TO RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST TO ADOPT DOMINION CORE DESIGN AND SAFETY ANALYSIS METHODS AND TO ADDRESS THE ISSUES IDENTIFIED IN WESTINGHOUSE DOCUMENTS NSAL-09-5, REV. 1, NSAL-15-1, AND 06-IC-03 (CAC NO. MF6251)

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3

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RAI #1

New proposed Action b in insert A to LCO 3.2.2.1, Action b, proposes a 4-hour Completion Time (CT) to reduce thermal power until the heat flux hot channel factor $F_Q(Z)$ is within its limits. What is the technical basis for a completion time of 4 hours instead of the 15-minute completion time in LCO 3.2.2.1, Action a(1)? No technical basis was provided in the CTS or the LAR to support this CT. Please provide the technical justification.

DNC Supplemental Response

The technical justification for a 4-hour completion time for Action b to LCO 3.2.2.1 Action b(1), instead of the 15-minute completion time in LCO 3.2.2.1 Action a(1), can be explained through a comparison of the different scenarios under which the LCOs are entered:

Action a(1) of LCO 3.2.2.1 is entered when surveillance requirement 4.2.2.1.2.b is not met. This surveillance requirement is to address an active violation of $F_Q(Z)$ limits. When measured $F_Q(Z)$ is above its limit, a 15-minute action time is appropriate to return $F_Q(Z)$ within the limit as quickly as possible.

In contrast, Action b(1) is entered when surveillance requirement 4.2.2.1.2.c is not met. This surveillance requirement is to address the condition when the non-equilibrium (or transient) $F_Q(Z)$ limit has not been met. In this case, measured $F_Q(Z)$ is not currently above its limit but could exceed its limit if a normal operation transient occurs. A 4-hour completion time is appropriate because if a normal operation transient were to occur based upon fission product (Xe) time scales, 4 hours is sufficient time to restrict axial flux difference (AFD) limits and thermal power so that core peaking factors are not exceeded.

In addition, reducing power and controlling/reducing AFD to be within new limits (and any resultant actions such as insertion of control rods) within a 15-minute time frame could lead to the initiation of a normal operation transient and make it more likely that core peaking factors could be violated. A 4-hour completion time allows for deliberate operator actions to minimize the initiation of a normal operation transient.

RAI #2

New proposed Action c in insert A to LCO 3.2.2.1, Action b, proposes a 72-hour CT to reduce the power range neutron flux – high trip setpoints by 1% for each 1% that the thermal power level is reduced. What is the technical basis for a 72-hour CT to adjust the power range neutron flux – high trip setpoints instead of the 4-hour CT allowed elsewhere in CTS (e.g., existing LCO 3.2.1.1 Action a.2 or LCO 3.2.2.1, Action a(1))? Please provide the technical justification.

DNC Supplemental Response

The power range neutron flux - high trip setpoints are reduced to protect against the consequences of a severe accident when surveillance requirement 4.2.2.1.2.c has not been met. A 72-hour CT is appropriate for this action because of the very low probability of a severe accident occurring (as opposed to a normal operation transient) and because Action b(1)a (AFD limit reduction) and Action b(1)b (THERMAL POWER reduction) are performed under a 4-hour CT, which reduces possible initial conditions that form the starting point for a severe accident. Minimizing or reducing possible initial conditions that form the starting point for a severe accident increases the likelihood that achievable power shapes that could occur during a severe accident have already been considered in the safety analysis calculation.