

Dominion Nuclear Connecticut, Inc.  
Millstone Power Station  
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March 25, 2008

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
One White Flint North  
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Serial No.: 07-0834K  
NLOS/MAE: R2  
Docket No.: 50-423  
License No.: NPF-49

**DOMINION NUCLEAR CONNECTICUT, INC.**  
**MILLSTONE POWER STATION UNIT 3**  
**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING**  
**STRETCH POWER UPRATE LICENSE AMENDMENT REQUEST**  
**SUPPLEMENTAL RESPONSE TO QUESTION EEEB-07-0052**

Dominion Nuclear Connecticut, Inc. (DNC) submitted a stretch power uprate license amendment request (LAR) for Millstone Power Station Unit 3 (MPS3) in letters dated July 13, 2007 (Serial Nos. 07-0450 and 07-0450A), and supplemented the submittal by letters dated September 12, 2007 (Serial No. 07-0450B), December 13, 2007 (Serial No. 07-0450C) and March 5, 2008 (Serial No. 07-0450D). The NRC staff forwarded requests for additional information (RAIs) in October 29, 2007, November 26, 2007, December 14, 2007 and December 20, 2007 letters. DNC responded to the RAIs in letters dated November 19, 2007 (Serial No. 07-0751), December 17, 2007 (Serial No. 07-0799), January 10, 2008 (Serial Nos. 07-0834, 07-0834A, 07-0834C, and 07-0834F), January 11, 2008 (Serial Nos. 07-0834B, 07-0834E, 07-0834G, and 07-0834H), January 14, 2008 (Serial No. 07-0834D), January 18, 2008 (Serial Nos. 07-0846, 07-0846A, 07-0846B, 07-0846C, and 07-0846D), January 31, 2008 (Serial No. 07-0834I), February 25, 2008 (Serial Nos. 07-0799A and 07-0834J), and March 10, 2008 (Serial Nos. 07-0846E and 07-0846F).

The response to Question EEEB-07-0052 in DNC's January 10, 2008 letter (Serial No. 07-0834C) contained a commitment to provide a summary of final results of evaluations of the acceptability of the EQ equipment for the increased accident temperature in the Main Steam Valve Building (MSVB) and the increased radiation total integrated dose (TID) in selected zones of the Engineered Safety Features (ESF) and Auxiliary Building. The requested information is provided in the attachment to this letter.

The information provided by this letter does not affect the conclusions of the significant hazards consideration discussion in the December 13, 2007 DNC letter (Serial No. 07-0450C).



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**ATTACHMENT**

**LICENSE AMENDMENT REQUEST**

**STRETCH POWER UPRATE LICENSE AMENDMENT REQUEST**

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

**SUPPLEMENTAL RESPONSE TO QUESTION EEEB-07-0052**

**MILLSTONE POWER STATION UNIT 3  
DOMINION NUCLEAR CONNECTICUT, INC.**

## **Electrical Engineering Branch**

### **EEEEB-07-0052**

For the Main Steam Valve Building, Engineered Safety Features Building, and Auxiliary Building, the license amendment request, in Section 2.3.1, indicates that SPU conditions may affect the EQ of electrical equipment. Provide the complete evaluations of the affected equipment, including an in-depth discussion of the assumptions and methodology.

### **DNC Initial Response (January 10, 2008)**

The evaluations of the acceptability of the EQ equipment for the increased accident temperature in the Main Steam Valve Building (MSVB) and the increased radiation total integrated dose (TID) in selected Engineered Safety Features (ESF) and Auxiliary Building zones are ongoing. The results will be available by March 31, 2008.

### **DNC Supplemental Response**

#### **Main Steam Valve Building**

DNC has finalized the analysis of the safety related equipment (described in Licensing Report Section 2.3.1.2.3.2) inside the Millstone Unit 3 Main Steam Valve Building (MSVB) affected by the increased environmental temperature conditions following the MSVB steam line break scenario for Stretch Power Uprate (SPU) conditions. The analysis is performed for the duration of the components' mission time, which is the time period from the initiation of the Main Steam Line Break (MSLB) until the point within the event that the component is required to perform its intended function.

The safety related equipment in the MSVB affected by the increased MSLB temperatures are: ASCO Solenoid valves, NAMCo limit switches, Rosemount pressure transmitters, Limatorque motor operated valves and solenoids associated with Sulzer main steam isolation valves (MSIVs) and ITT actuators.

The analysis shows that the calculated temperature of the ASCO solenoid valves, NAMCo limit switches and Rosemount pressure transmitters remains within their respective EQ qualified temperature limits for the steam line break event. The analysis evaluated environmental temperature profiles for various break sizes up to 1.0 sq ft. Bounding transient temperature profiles were applied in calculating the peak component temperatures. The component casing temperature was conservatively compared with the component qualification temperature, instead of the temperature of the internals. Additionally, the analysis conservatively used a higher initial ambient temperature of 140°F.

The analysis for the Limitorque motor operated valves, specifically the atmospheric dump/dump bypass block valves' motor operators indicate the motor operators will require insulation in order to maintain the temperature of the motors below their qualification temperature limit during a steam line break event. The block valves, 3MSS\*MOV18A/B/C/D, are only required to perform their safety function to close for breaks outside the break exclusion zone. Therefore, the only steam line breaks considered were those that were within the MSVB and outside of the break exclusion zone. The three inch line break is considered the worst case break for this analysis. These valves are in constant communication with steam during normal operation. Therefore, the analysis used initial casing surface temperatures that are higher than the initial ambient temperature. The calculated maximum casing temperature remains below the motor qualification temperature with the motor operators insulated. As part of the implementation of the SPU project, a design change will be performed to insulate the motor operators.

The solenoid valves associated with Sulzer MSIVs and ITT actuators described in Licensing Report (LR) section 2.3.1.2.3.2 have been evaluated. The Sulzer solenoid valves will not be adversely affected by the increase in MSVB temperature transient following a steam line break. The ITT actuators are not required to mitigate the consequences of a MSLB in the MSVB.

#### Engineered Safety Features (ESF) Building and Aux Building

In Sections 2.3.1.2.3.3 and 2.3.1.2.3.4 of the LR, ESF EQ Zones ES-01 and ES-07, and Aux Building EQ Zones AB-19, AB-22, AB-24, and AB-31 were identified as requiring resolution for increased radiation levels due to the SPU. The evaluation for EQ zones AB-24 and AB-31 concluded that the total integrated dose remains below the threshold limits for all safety related components, including those that contain complementary metal oxide semiconductors or Teflon materials.

Further plant walkdowns and design document reviews were performed for safety related equipment in EQ zones AB-19, AB-22, ES-01 and ES-07 to determine if additional equipment had to be added to the EQ program as a result of the increase in radiation levels. The plant walkdowns and design documents provided information on the location of the equipment with respect to the gamma source term (i.e., factoring in distance from the source or location relative to penetrations) as well as the extent of beta shielding for the equipment (i.e., size and wall thickness of metal enclosures or if enclosures are open to the environment). The source term used in calculating the total integrated dose for the equipment is described in LR Section 2.3.1.2.2, Page 2.3-4. This analysis shows the total integrated dose to the components in EQ zones AB-19, AB-22, ES-01 and ES-07 remains below the dose threshold required for inclusion in the EEQ program (1.00E+04 Rads).