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Dominion®

March 27, 2017

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

Serial No. 17-113
NRA/WDC R0
Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
SUPPLEMENT TO PROPOSED EXEMPTION REQUEST FOR THE USE OF AXIOM
CLADDING MATERIAL IN LEAD TEST ASSEMBLIES

In a letter dated June 30, 2016, Dominion Nuclear Connecticut, Inc. (DNC) requested an exemption from certain requirements of 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," and Appendix K of 10 CFR 50, "ECCS Evaluation Models" for Millstone Power Station (MPS) Unit 3 (MPS3). DNC requested the exemption to allow up to eight lead test assemblies containing fuel rods fabricated with AXIOM cladding. The exemption request is required since the metallurgical content of the AXIOM material is outside the metallurgical content of cladding types approved for use at MPS3 (i.e., Zirc-4, ZIRLO, or Optimized ZIRLO™).

This letter supplements the June 30, 2016 exemption request with a no significant hazards consideration determination and a statement regarding categorical exclusion from an environmental assessment as set forth in 10 CFR 51.22(c)(9). Attachment 1 provides the supplemental information. DNC has reviewed the proposed exemption and determined the proposed exemption does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and meets the eligibility criterion for categorical exclusion from an environmental assessment. Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared for the proposed exemption.

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

Sincerely,

Mark D. Sartain
Vice President – Nuclear Engineering and Fleet Support

Attachment: No Significant Hazards Consideration Determination and Environmental Consideration

ADD
NRR

Commitments made in this letter: None

cc: U.S. Nuclear Regulatory Commission
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Attachment'

**No Significant Hazards Consideration Determination and
Environmental Consideration**

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

No Significant Hazards Consideration Determination

Dominion Nuclear Connecticut, Inc. (DNC) is requesting an exemption from certain requirements of 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," and Appendix K of 10 CFR 50, "ECCS Evaluation Models" for Millstone Power Station (MPS) Unit 3 (MPS3). DNC requested the exemption to allow up to eight lead test assemblies (LTAs) containing fuel rods fabricated with AXIOM cladding. The exemption request is required since the metallurgical content of the AXIOM material is outside the metallurgical content of cladding types approved for use at MPS3 (i.e., Zirc-4, ZIRLO, or Optimized ZIRLO™).

The NRC has provided standards for determining whether a significant hazards consideration exists in 10 CFR 50.92(c). A determination that a proposed exemption involves no significant hazards consideration may be made if operation of the facility in accordance with the proposed exemption would not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated, or 2) create the possibility of a new or different kind of accident from any accident previously evaluated, or 3) involve a significant reduction in a margin of safety. DNC has evaluated if a significant hazards consideration is involved with the proposed exemption request. A discussion of these standards as they relate to this exemption request is provided below.

1. *Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?*

No. The proposed exemption would allow DNC to insert up to eight LTAs with AXIOM fuel rod cladding at MPS3.

The proposed exemption from the requirements of 10 CFR 50.46 and 10 CFR 50, Appendix K, to permit the use of the AXIOM cladding material in the MPS3 core does not adversely affect any fission product barrier, nor does it alter the safety function of safety systems, structures, or components, or their roles in accident prevention or mitigation. AXIOM cladding material is not an accident initiator. The response of the fuel to an accident is analyzed using conservative techniques, and the results are compared to NRC-approved acceptance criteria. Reload specific analyses conducted by DNC and the fuel vendor demonstrate the design limits of the fuel cladding are met.

Station operation and analysis will continue to be in compliance with NRC regulations. Westinghouse will perform an evaluation of the MPS3 core using Loss of Coolant Accident (LOCA) methods approved for the site to ensure that assemblies with AXIOM fuel rod cladding material meet the LOCA safety criteria. Thus, the plant will continue to meet applicable design criteria and safety analysis acceptance criteria.

Consequently, permitting the insertion of up to eight LTAs with AXIOM fuel rod

cladding in the MPS3 core does not affect the probability of an accident or transient or the consequences thereof. Therefore, the proposed exemption does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Does the proposed amendment create the possibility of a new or different type of accident from any accident previously evaluated?*

No. The proposed exemption from the requirements of 10 CFR 50.46, and 10 CFR 50, Appendix K, does not impact the plant configuration or system performance. The proposed exemption does not modify any interfaces with existing equipment, change the equipment's function, or change the method of operating the equipment.

Use of the AXIOM fuel rod cladding material in the MPS3 core does not adversely affect any fission product barrier, nor does it alter the safety function of safety systems, structures, or components, or their roles in accident prevention or mitigation. Westinghouse will perform an evaluation of the MPS3 core using Loss of Coolant Accident (LOCA) methods approved for the site to ensure that assemblies with AXIOM fuel rod cladding material meet the LOCA safety criteria. Prior to each cycle, the AXIOM LTAs will be evaluated to ensure that current design criteria are met for the projected burnup. Current NRC-approved models will be conservatively applied to bound AXIOM cladding material properties and expected behavior. If any current design criteria are not met, the LTAs with AXIOM fuel rod cladding will not be inserted into the core.

The proposed exemption assures there is adequate margin available to meet safety analysis criteria and does not introduce any failure modes, accident initiators, or equipment malfunctions that would cause a new or different kind of accident. Therefore, the proposed exemption does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *Does the proposed amendment involve a significant reduction in a margin of safety?*

No. The proposed exemption from the requirements of 10 CFR 50.46, and 10 CFR 50, Appendix K, does not impact the plant configuration or system performance and use of the AXIOM cladding material in the MPS3 core does not adversely affect any fission product barrier. Current NRC-approved models will be conservatively applied to bound AXIOM cladding material properties and expected behavior to ensure the plant continues to meet applicable design criteria and safety analysis acceptance criteria. The proposed exemption does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined, and the dose analysis

acceptance criteria are not affected. The proposed exemption does not result in plant operation in a configuration outside the analyses or design basis and does not adversely affect systems that respond to safely shutdown the plant and maintain the plant in a safe shutdown condition.

Westinghouse will perform an evaluation of the MPS3 core using Loss of Coolant Accident (LOCA) methods approved for the site to ensure that assemblies with AXIOM fuel rod cladding material meet the LOCA safety criteria. Prior to each cycle, the AXIOM LTAs will be evaluated to ensure that current design criteria are met for the projected burnup. Current NRC-approved models will be conservatively applied to bound AXIOM cladding material properties and expected behavior. If any current design criteria are not met, the AXIOM cladding LTAs will not be inserted into the core.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Dominion concludes that the proposed change does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

Environmental Consideration

Dominion has reviewed the proposed exemption for environmental considerations. The proposed exemption does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed exemption meets the eligibility criterion for categorical exclusion from an environmental assessment as set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed exemption.