

September 26, 2003

Mr. David A. Christian  
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5000 Dominion Boulevard  
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SUBJECT: MILLSTONE POWER STATION, UNIT NO. 3 - REQUEST FOR ADDITIONAL  
INFORMATION REGARDING EXEMPTION TO USE A LOW TIN CLADDING  
(TAC NO. MB9897)

Dear Mr. Christian:

By letter dated July 1, 2003, Dominion Nuclear Connecticut, Inc., requested an exemption from the requirements of Title 10 of the *Code of Federal Regulations* Parts 50.44, 50.46, and Appendix K. The purpose of this exemption would allow the use of up to eight lead test assemblies fabricated with a "low tin" version of ZIRLO™, called Optimized ZIRLO™.

In order to continue our review of your request, additional information, as delineated in the Enclosure, is required.

Sincerely,

**/RA/**

Victor Nerses, Senior Project Manager, Section 2  
Project Directorate I  
Division of Licensing and Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure: Request for Additional Information

cc w/encl: See next page

Millstone Power Station, Unit No. 3

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Millstone Power Station, Unit No. 3

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OFFICE	PDI-2/PM	PDI-2/LA	SRXB/SC	PDI-2/SC
NAME	VNerses	CRaynor	FAkstulewicz	JBoska for JClifford
DATE	09/09/03	09/08/03	09/09/03	09/25/03

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## REQUEST FOR ADDITIONAL INFORMATION

### EXEMPTION TO 10 CFR PARTS 50.44, 50.46, AND APPENDIX K

#### MILLSTONE POWER STATION, UNIT NO. 3

#### DOCKET NO. 50-423

By letter dated July 1, 2003, Dominion Nuclear Connecticut (DNC), Inc., requested an exemption from the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Parts 50.44, 50.46, and Appendix K. The purpose of this exemption would allow the use of up to eight lead test assemblies fabricated with a "low tin" version of ZIRLO™, called Optimized ZIRLO™. The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information the licensee provided that supports the proposed changes to the Technical Specification (TS). In order for the staff to complete its evaluation, the following additional information is requested:

1. Attachment 1, Page 1, of the DNC letter dated July 1, 2003, states, "Westinghouse has submitted Addendum 1 to WCAP-12610-P-A/CENPD-404-P-A that addresses Optimized ZIRLO™ and demonstrates that Optimized ZIRLO™ has essentially the same properties as currently licensed ZIRLO™ and fits the definition of ZIRLO™ that was used when the "Rule" change was made to 10 CFR 50.44 and 10 CFR 50.46." Review of Addendum 1 is currently underway and this conclusion has not been acknowledged by the staff. Review of this exemption request needs to remain independent of Addendum 1 to WCAP-12610-P-A/CENPD-404-P-A. Instead of referencing Addendum 1, provide all necessary supporting material.
2. TS 5.3.1 states, "A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions." The exemption request states that the reload design will ensure that the lead test assemblies (LTAs) are not placed in limiting core locations. Describe the fuel management guidelines and supporting safety analyses used to ensure that the LTAs are not placed in limiting locations.
3. The exemption request does not specify fuel duty targets for the eight LTAs.
  - (a) Provide fuel duty targets for the eight LTAs, including projected burnup for each reload cycle.
  - (b) Is projected burnup expected to exceed the current licensed limit for ZIRLO™?
  - (c) Is projected fuel duty expected to exceed limits of less than 100 microns of predicted oxidation with no blistering or spallation?
4. The exemption request does not specify post-irradiation examinations for the eight LTAs. Provide the details of the examinations (e.g., visual, fuel assembly length, fuel assembly bow, fuel assembly drag, fuel rod length, fuel rod wear, fuel rod profilometry, cladding oxidation, etc.) planned for the LTAs.

5. How will DNC/Westinghouse ensure that fuel performance models and fuel duty predictions remain conservative for this developmental cladding material, especially in subsequent cycles.
6. Attachment 1, Page 7, of DNC letter dated July 1, 2003, states, "Application of the Baker-Just equation has been demonstrated to be appropriate for the Optimized ZIRLO™ alloy. Due to the similarities in the composition of the Optimized ZIRLO™ and standard ZIRLO™, the application of the Baker-Just equation will continue to conservatively bound all post-loss-of-coolant accident scenarios."
  - (a) In the first sentence, did you mean to state that the Baker-Just equation has been demonstrated to be appropriate for standard ZIRLO™?
  - (b) If it is correctly written, where has the Baker-Just equation been previously demonstrated to be appropriate for Optimized ZIRLO™?