



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 13, 2012

Mr. David A. Heacock
President and Chief Nuclear Officer
Dominion Nuclear Connecticut, Inc.
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION, UNIT 3 - ENVIRONMENTAL ASSESSMENT
AND FINDING OF NO SIGNIFICANT IMPACT - RE: OPTIMIZED ZIRLO™
FUEL ROD CLADDING MATERIALS (TAC NO. ME7724)

Dear Mr. Heacock:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for exemption dated November 17, 2011.

The proposed exemption would add Optimized ZIRLO™ as an acceptable fuel rod cladding materials in future core reload applications.

The environmental assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

A handwritten signature in cursive script that reads "James Kim".

James Kim, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure:
Environmental Assessment

cc w/encl: Distribution via Listserve

NUCLEAR REGULATORY COMMISSION

[Docket No. 50-423; NRC-2012-XXXX]

[Dominion Nuclear Connecticut, Inc.]

[Millstone Power Station, Unit 3]

Environmental Assessment and Finding of No Significant Impact

AGENCY: Nuclear Regulatory Commission.

ACTION: Environmental assessment and finding of no significant impact; issuance.

ADDRESSES: Please refer to Docket ID <NRC-2012-XXXX> when contacting the NRC about the availability of information regarding this document. You may access information related to this document, which the NRC possesses and are publicly available, using any of the following methods:

- **Federal rulemaking Web site:** Go to <http://www.regulations.gov> and search for Docket ID <NRC-2012-XXXX>. Address questions about NRC dockets to Carol Gallagher; telephone: 301-492-3668; e-mail: Carol.Gallagher@nrc.gov.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**
You may access publicly available documents online in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The ADAMS accession number for each document referenced in this notice (if that document is available in ADAMS) is provided the first

time that a document is referenced. The application for amendment, dated November 17, 2011 is available electronically under ADAMS Accession No. ML11329A003.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

SUPPLEMENTARY INFORMATION:

I. Introduction

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an exemption from Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.46 "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," and Appendix K to 10 CFR Part 50, "ECCS [emergency core cooling system] Evaluation Models," to allow the use of Optimized ZIRLO™ fuel rod cladding in future core reload applications for Millstone Power Station, Unit 3 (MPS3), for Renewed Facility Operating License No. NPF-49 Dominion Nuclear Connecticut, Inc. (DNC or the licensee), for operation of MPS3 located in the town of Waterford, CT. Therefore, as required by 10 CFR 51.21, the NRC performed an environmental assessment. Based on the results of the environmental assessment, the NRC is issuing a finding of no significant impact.

II. Environmental Assessment

Identification of the Proposed Action:

The proposed action would add Optimized ZIRLO™ as an acceptable fuel rod cladding material. The proposed action is in accordance with the licensee's application dated November

17, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11329A003).

The Need for the Proposed Action:

The proposed action is needed because the regulation in 10 CFR 50.46 contains acceptance criteria for the ECCS for reactors that have fuel rods fabricated either with Zircaloy or ZIRLO™. Appendix K to 10 CFR Part 50, paragraph I.A.5, requires the Baker-Just equation to be used to predict the rates of energy release, hydrogen concentration, and cladding oxidation for the metal-water reaction. The Baker-Just equation assumed the use of a zirconium alloy different than Optimized ZIRLO™; therefore, an exemption is required.

Environmental Impacts of the Proposed Action:

The NRC has completed its evaluation of the proposed action and concludes that the exemption does not present undue risk to public health and safety, and is consistent with common defense and security.

The details of the staff's safety evaluation will be provided in the license amendment that will be issued as part of the letter to the licensee approving the license amendment to the regulation.

The proposed action will not significantly increase the probability or consequences of accidents. No changes are being made in the types of effluents that may be released offsite. There is no significant increase in the amount of any effluent released offsite. There is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential non-radiological impacts, the proposed action does not have any foreseeable impacts to land, air, or water resources, including impacts to biota. In addition, there are also no known socioeconomic or environmental justice impacts associated with such proposed action. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action:

As an alternative to the proposed action, the NRC staff considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

The action does not involve the use of any different resources than those previously considered in the NRC's 1984 "Final Environmental Statement Related to operation of Millstone Nuclear Power Station, Unit No. 3," and NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," Supplement 22 regarding Millstone Power Station, Units 2 and 3.

Agencies and Persons Consulted:

In accordance with its stated policy, on July 30, 2012, the staff consulted with the Connecticut State official, Michael Firsick of the Department of Environmental Protection,

regarding the environmental impact of the proposed action. The State official had no comments.

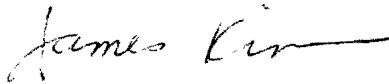
III. Finding of No Significant Impact

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's application dated November 17, 2011.

Dated at Rockville, Maryland, this 13th day of August 2012.

FOR THE NUCLEAR REGULATORY COMMISSION



James Kim, Project Manager
Plant Licensing Branch 1-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

August 13, 2012

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Sincerely,

/ra/

James Kim, Project Manager
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Environmental Assessment

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DATE	8/1/12	8/1/12	8/2/12	8/8/12	8/13/12