



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

September 27, 2010

Mr. Mark A. Schimmel  
Site Vice President  
Prairie Island Nuclear Generating Plant  
Northern States Power Company - Minnesota  
1717 Wakonade Drive East  
Welch, MN 55089-9642

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 –  
ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT  
IMPACT (TAC NOS. ME2790 AND ME2791)

Dear Mr. Schimmel:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for exemption dated November 24, 2009, as supplemented on May 26, 2010. This Environmental Assessment relates to the proposed exemption from the provisions of Section 50.46 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Acceptance criteria for emergency core cooling systems [ECCS] for light-water nuclear power reactors," and 10 CFR 50, Appendix K, "ECCS Evaluation Models" to allow the use of Optimized ZIRLO™ fuel rod cladding in future core reload applications for the Prairie Island Nuclear Generating Plant, Units 1 and 2.

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

Sincerely,

A handwritten signature in black ink that reads "Thomas J. Wengert".

Thomas J. Wengert, Senior Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure:  
Environmental Assessment

cc w/encl: Distribution via Listserv

UNITED STATES NUCLEAR REGULATORY COMMISSIONNORTHERN STATES POWER COMPANY - MINNESOTADOCKET NOS. 50-282 AND 50-306PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2ENVIRONMENTAL ASSESSMENT AND FINDING OFNO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC) is considering the issuance of an exemption from Title 10 of the *Code of Federal Regulations*, (10 CFR), Section 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," and 10 CFR 50, Appendix K, "ECCS Evaluation Models," for Facility Operating License Nos. DPR-42 and DPR-60, issued to Northern States Power Company, a Minnesota corporation (NSPM, the licensee), for operation of the Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP), located in Goodhue County, Minnesota. In accordance with 10 CFR 51.21, the NRC performed an environmental assessment in support of this requested exemption. Based on the results of the environmental assessment, the NRC is issuing a finding of no significant impact.

ENVIRONMENTAL ASSESSMENTIdentification of the Proposed Action:

The proposed action would consider approval of an exemption for PINGP to the requirements of 10 CFR 50.46 and 10 CFR Appendix K, by allowing NSPM to use Optimized ZIRLO™, an advanced alloy fuel cladding material for pressurized-water reactors. The proposed action is in accordance with the licensee's application dated November 24, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML093280883), as supplemented by letter dated May 26, 2010 (ADAMS Accession No. ML101480083).

The Need for the Proposed Action:

The proposed action is needed so that NSPM can use Optimized ZIRLO™, an advanced alloy for fuel rod cladding and other assembly structural components at the PINGP.

Section 50.46 of 10 CFR and 10 CFR Part 50, Appendix K, make no provisions for use of fuel rods clad in a material other than zircaloy or ZIRLO™. Since the chemical composition of the Optimized ZIRLO™ alloy differs from the specifications for zircaloy or ZIRLO™, a plant-specific exemption is required to allow the use of the Optimized ZIRLO™ alloy as a cladding material or in other assembly structural components at the PINGP.

Environmental Impacts of the Proposed Action:

The NRC has completed its environmental assessment of the proposed exemption. The staff has concluded that the proposed action to approve the use of an additional fuel rod cladding material would not significantly affect plant safety and would not have a significant adverse effect on the probability of an accident occurring.

The NRC staff's safety evaluation will be provided in the exemption that will be issued as part of the letter to the licensee approving the exemption to the regulation, if granted.

The proposed action would not result in an increased radiological hazard beyond those previously analyzed in the Final Environmental Statement for the PINGP dated May 1973 (ADAMS Accession No. ML081840311). There will be no change to radioactive effluents that affect radiation exposures to plant workers and members of the public. Therefore, no changes or different types of radiological impacts are expected as a result of the proposed exemption.

The proposed action does not result in changes to land use or water use, or result in changes to the quality or quantity of non-radiological effluents. No changes to the National Pollution Discharge Elimination System permit are needed. No effects on the aquatic or terrestrial habitat in the vicinity of the plant, or to threatened, endangered, or protected species under the Endangered Species Act, or impacts to essential fish habitat covered by the

Magnuson-Steven's Act are expected. There are no impacts to the air or ambient air quality. There are no impacts to historical and cultural resources. There would be no impact to socioeconomic resources. Therefore, no changes to or different types of non-radiological environmental impacts are expected as a result of the proposed exemption.

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 staff considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application request 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 considered in the Final Environmental Statement for the PINGP dated May 1973 (ADAMS Accession No. ML081840311).

Agencies and Persons Consulted:

In accordance with its stated policy, on September 3, 2010, the staff consulted with the Minnesota State official, Mr. Stephen Rakow of the Minnesota Office of Energy Security, regarding the environmental impact of the proposed action. The State official had no comments.

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.

FURTHER INFORMATION

For further details with respect to the proposed action, see the licensee's letter dated November 24, 2009 (ADAMS Accession No. ML093280883), as supplemented by letter dated May 26, 2010 (ADAMS Accession No. ML101480083). Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or send an e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

Dated at Rockville, Maryland, this 27<sup>th</sup> day of September, 2010.

FOR THE NUCLEAR REGULATORY COMMISSION



Thomas J. Wengert, Senior Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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Sincerely,

/RA/

Thomas J. Wengert, Senior Project Manager  
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**ADAMS Accession Nos.:**

PKG ML102720903 Letter (NRR-106) ML101720240 EA FRN (NRR-044) ML101720196

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