

April 23, 1998

Mr. Roger O. Anderson, Director
Nuclear Energy Engineering
Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

SUBJECT: ENVIRONMENTAL ASSESSMENT - PRAIRIE ISLAND NUCLEAR
GENERATING PLANT UNITS 1 AND 2 (TAC NOS. MA0682 AND MA0683)

Dear Mr. Anderson:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for exemption dated March 6, 1998. The proposed exemption would permit the use of the American Society of Mechanical Engineers Code Case N-514 for determining each unit's over pressure protection system pressure setpoint.

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

Sincerely,
ORIGINAL SIGNED BY

Beth A. Wetzel, Senior Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure: Environmental Assessment

cc w/encl: See next page

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Dfor*

Mr. Roger O. Anderson, Director
Northern States Power Company

Prairie Island Nuclear Generating
Plant

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UNITED STATES NUCLEAR REGULATORY COMMISSIONNORTHERN STATES POWER COMPANYDOCKET 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 (the Commission) is considering issuance of an exemption from certain requirements of its regulations to Facility Operating License Nos. DPR-42 and DPR-60, issued to Northern States Power Company (NSP or the licensee), for operation of Prairie Island Nuclear Generating Plant, Units 1 and 2, located in Goodhue County, Minnesota.

ENVIRONMENTAL ASSESSMENTIdentification of the Proposed Action:

The proposed action would permit the licensee to use American Society of Mechanical Engineers (ASME) Code Case N-514 for setting the pressure setpoint of each unit's overpressure protection system (OPPS) so that the pressure-temperature (P-T) limits required by 10 CFR Part 50, Appendix G, could be exceeded by 10 percent during a low temperature pressure transient. By application dated March 6, 1998, the licensee requested an exemption from certain requirements of 10 CFR 50.60, "Acceptance Criteria for Fracture Prevention Measures for Lightwater Nuclear Power Reactors for Normal Operation," and 10 CFR Part 50, Appendix G, "Fracture Toughness Requirements."

The Need for the Proposed Action:

Pursuant to 10 CFR 50.60, all lightwater nuclear power reactors must meet the fracture toughness requirements for the reactor coolant pressure boundary as set forth in 10 CFR Part 50, Appendix G. Appendix G of 10 CFR Part 50 defines P-T limits during any condition of normal operation, including anticipated operational occurrences and system hydrostatic tests to which the pressure boundary may be subjected over its service lifetime, and specifies that these P-T limits must be at least as conservative as the limits obtained by following the methods of analysis and the margins of safety of the ASME Code, Section XI, Appendix G.

By letter dated March 6, 1998, NSP submitted an exemption request to enable the use of ASME Code Case N-514 as an alternative method for determining the OPSS setpoint. NSP determined that the exemption request from the provisions of 10 CFR 50.60 and Appendix G was necessary since these regulations require, as noted above, that the reactor vessel conditions not exceed the P-T limits established by Appendix G. In referring to 10 CFR 50.12 on specific exemptions, NSP cited special circumstances as stated in 10 CFR 50.12(a)(2)(ii) on achieving the underlying purpose of the regulations as its basis for requesting this exemption.

The underlying purpose of 10 CFR Part 50, Appendix G, is to establish fracture toughness requirements for the reactor coolant system (RCS) pressure boundary to provide adequate margins of safety during any condition of normal operation. The OPSS provides a physical means of protecting these limits. NSP proposed that establishing the OPSS pressure setpoint per the N-514 provisions such that the vessel pressure would not exceed 110 percent of the P-T limit allowables would still provide an acceptable level of safety and mitigate the potential for an inadvertent actuation of the OPSS.

The plant operators must operate the plant in a pressure window that is between the minimum pressure required to preserve reactor coolant pump seals and at a maximum pressure that does not challenge the power-operated relief valve setpoint. Without the application of ASME Code Case N-514, Prairie Island would have an operating window that is too narrow to permit reasonable system makeup and pressure control. Further reduction of the OPPS setpoint below 500 psig would increase the probability that the reactor coolant pumps' no. 1 seal will fail as a result of OPPS operation, and that such a seal failure could produce a breach in the RCS boundary that could not be isolated. Therefore, inadvertent OPPS actuation could lead to a small break loss-of-coolant accident and the unnecessary release of reactor coolant inside containment.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed action and concludes that the proposed action involves features located entirely within the protected areas as defined in 10 CFR Part 20.

The proposed action will not increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released offsite, and there is no significant increase in the allowable individual or cumulative occupational radiation exposure. Accordingly, the Commission concludes that there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed action does involve features located entirely within the restricted area as defined in 10 CFR Part 20. It does not affect nonradiological plant effluents and has no other environmental impact. Accordingly, the Commission concludes that there are no significant nonradiological environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

Since the Commission has concluded there is no measurable environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. As an alternative to the proposed action, the staff considered denial of the proposed action. 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:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for the Prairie Island Nuclear Generating Plant.

Agencies and Persons Consulted:

In accordance with its stated policy, on April 7, 1998, the staff consulted with the Minnesota State official, Mike McCarthy of the Department of Public Service, regarding the environmental impact of the proposed action. The state official had no comments.

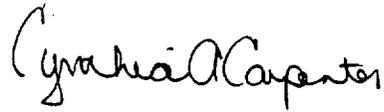
FINDING OF NO SIGNIFICANT IMPACT

Based upon the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission 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 letter dated March 6, 1998, which is available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW., Washington, DC, and at the Local Public Document Room located at the Minneapolis Public Library, Technology and Science Department, 300 Nicollet Mall, Minneapolis, Minnesota 55401.

Dated at Rockville, Maryland, this 23rd day of April, 1998.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink that reads "Cynthia A. Carpenter". The signature is written in a cursive style with a large initial "C".

Cynthia A. Carpenter, Director
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation