

Mr. Robert E. Link, President
Nuclear Power Department
Wisconsin Electric Power Company
231 West Michigan Street, Room P379
Milwaukee, WI 53201

SUBJECT: ENVIRONMENTAL ASSESSMENT RELATED TO GRANTING AN EXEMPTION FROM REQUIREMENTS OF 10 CFR 50.60, ACCEPTANCE CRITERIA FOR FRACTURE PREVENTION FOR LIGHTWATER NUCLEAR POWER REACTORS FOR NORMAL OPERATION, FOR FACILITY OPERATING LICENSE NOS. DPR-24 AND DPR-27 - POINT BEACH NUCLEAR PLANT, UNIT NOS. 1 AND 2 (TAC NOS. M96166 AND M96167)

Dear Mr. Link:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your request for an exemption from the requirements of 10 CFR 50.60, "Acceptance Criteria for Fracture Prevention for Lightwater Nuclear Power Reactors for Normal Operation," dated July 1, 1996, as supplemented November 18, 1996. The proposed exemption would permit using the safety margins recommended in the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Case N-514, "Low Temperature Overpressure Protection," in lieu of the safety margins required by 10 CFR Part 50, Appendix G.

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

Sincerely,

Original signed by Linda L. Gundrum
Linda L. Gundrum, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-266
and 50-301

Enclosure: Environmental Assessment

cc w/encl: See next page

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Point Beach Nuclear Plant
Unit Nos. 1 and 2

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UNITED STATES NUCLEAR REGULATORY COMMISSION
WISCONSIN ELECTRIC POWER COMPANY
DOCKET NOS. 50-266 AND 50-301
POINT BEACH NUCLEAR PLANT
ENVIRONMENTAL ASSESSMENT AND FINDING OF
NO 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-24 and DPR-27, issued to Wisconsin Electric Power Company, (the licensee), for operation of Point Beach Nuclear Plant, Unit Nos. 1 and 2, located in Manitowoc County, Wisconsin.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

The proposed action would allow the licensee to utilize the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Case N-514, "Low Temperature Overpressure Protection," to determine its low temperature overpressure protection (LTOP) setpoints and is in accordance with the licensee's application for exemption dated July 1, 1996, as supplemented November 18, 1996. The proposed action requests an exemption from certain requirements of 10 CFR 50.60, "Acceptance Criteria for Fracture Prevention Measures for Lightwater Nuclear Power Reactors for Normal Operation," to allow application of an alternate methodology to determine the LTOP setpoints for Point Beach Nuclear Plant, Unit Nos. 1 and 2. The proposed alternate methodology is consistent with guidelines

developed by the ASME Working Group to define pressure limits during LTOP events that avoid certain unnecessary operational restrictions, provide adequate margins against failure of the reactor pressure vessel, and reduce the potential for unnecessary activation of pressure-relieving devices used for LTOP. These guidelines have been incorporated into Code Case N-514, "Low Temperature Overpressure Protection," which has been approved by the ASME Code Committee. The content of Code Case N-514 has been incorporated into Appendix G of Section XI of the ASME Code and published in the 1993 Addenda to Section XI. However, 10 CFR 50.55a, "Codes and Standards," and Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability" have not been updated to reflect the acceptability of Code Case N-514.

The philosophy used to develop Code Case N-514 guidelines is to ensure that the LTOP limits are still below the pressure/temperature (P/T) limits for normal operation but allow the pressure that may occur with activation of pressure-relieving devices to exceed the P/T limits, provided acceptable margins are maintained during these events. This philosophy protects the pressure vessel from LTOP events and still maintains the Technical Specifications P/T limits applicable for normal heatup and cooldown in accordance with 10 CFR Part 50, Appendix G, and Sections III and XI of the ASME Code.

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, which 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. It is specified in 10 CFR 50.60(b) that alternatives to the described requirements in 10 CFR Part 50, Appendix G, may be used when an exemption is granted by the Commission pursuant to 10 CFR 50.12.

To prevent transients that would produce excursions exceeding the 10 CFR Part 50, Appendix G, P/T limits while the reactor is operating at low temperatures, the licensee installed an LTOP system. The LTOP system includes pressure-relieving devices in the form of power-operated relief valves (PORVs) that are set at a pressure below the LTOP enabling temperature that would prevent the pressure in the reactor vessel from exceeding the P/T limits of 10 CFR Part 50, Appendix G. To prevent these valves from lifting as a result of normal operating pressure surges (e.g., reactor coolant pump starting or stopping) with the reactor coolant system in a water solid condition, the operating pressure must be maintained below the PORV setpoint. The licensee's current LTOP analysis indicates that using this 10 CFR Part 50, Appendix G, safety margin to determine the PORV setpoint requires operation of the plant in a narrow range of pressure that could result in the lifting of the PORVs during normal heatup and cooldown operation. Using Code Case N-514 would allow the licensee to operate without a restriction on the number of operating reactor coolant pumps in the determination of the LTOP setpoint analysis. Therefore, the licensee proposed that in determining the PORV setpoint for LTOP events for Point Beach, the allowable pressure be determined using the safety margins developed in an alternate methodology in lieu of the safety margins required by 10 CFR Part 50, Appendix G. The alternate methodology is

consistent with ASME Code Case N-514. The content of Code Case N-514 was incorporated into Appendix G of Section XI of the ASME Code and published in the 1993 Addenda to Section XI.

An exemption from 10 CFR 50.60 is required to use the alternate methodology for calculating the maximum allowable pressure for LTOP considerations. By application dated July 1, 1996, as supplemented November 18, 1996, the licensee requested an exemption from 10 CFR 50.60 to allow it to utilize the alternate methodology of Code Case N-514 to compute its LTOP setpoints.

Environmental Impacts of the Proposed Action:

Appendix G of the ASME Code requires that the P/T limits be calculated (a) using a safety factor of 2 on the principal membrane (pressure) stresses, (b) assuming a flaw at the surface with a depth of one-quarter (1/4) of the vessel wall thickness and a length of 6 times its depth, and (c) using a conservative fracture toughness curve that is based on the lower bound of static, dynamic, and crack arrest fracture toughness tests on material similar to the Point Beach reactor vessel material.

In determining the PORV setpoint for LTOP events, the licensee proposed the use of safety margins based on an alternate methodology consistent with the proposed ASME Code Case N-514 which allows determination of the setpoint for LTOP events such that the maximum pressure in the vessel will not exceed 110 percent of the P/T limits of the existing ASME Appendix G. This results in a safety factor of 1.8 on pressure. All other factors, including assumed flaw size and fracture toughness, remain the same. Although this methodology would reduce the safety factor on pressure, it was demonstrated in the Bases of ASME Code Case N-514 that due to the

isothermal nature of LTOP events, the margins with respect to toughness for LTOP transients is within the range provided by ASME, Section XI, Appendix G, for normal heatup and cooldown in the low temperature range. Thus, applying Code Case N-514 will satisfy the underlying purpose of 10 CFR 50.60 for fracture toughness requirements. Further, by relieving the operational restrictions, the potential for undesirable lifting of the PORV would be reduced, thereby improving plant safety.

The change 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 Point Beach Nuclear Plant, Unit Nos. 1 and 2.

Agencies and Persons Consulted:

In accordance with its stated policy, on November 29, 1996, the staff consulted with the Wisconsin State official, Ms. Sarah Jenkins, of the Public Service Commission of Wisconsin, 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 letters dated July 1 and November 18, 1996, which are 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 Joseph P. Mann Library, 1516 Sixteenth Street, Two Rivers, Wisconsin 54241.

Dated at Rockville, Maryland, this 10th day of December 1996.

FOR THE NUCLEAR REGULATORY COMMISSION

original signed by Linda L. Gundrum

Linda L. Gundrum, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

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