UNITED STATES NUCLEAR REGULATORY COMMISSION

WISCONSIN PUBLIC SERVICE CORPORATION

DOCKET NO. 50-305

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission is considering issuance of an amendment to Facility Operating License No. DPR-43, issued to Wisconsin Public Service Corporation (the licensee), for operation of the Kewaunee Nuclear Power Plant, located in Kewaunee, Wisconsin.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action

The proposed amendment would allow the licensee to increase the allowable fuel enrichment at the Kewaunee Nuclear Power Plant from the current limit of 38.5 grams of Uranium-235 per axial centimeter of fuel assembly (or 3.67 as-built weight percent) to 49.2 grams of Uranium-235 per axial centimeter (or 4.75 as-built weight percent). The proposed amendment would allow the reload of the higher enrichment fuel assemblies and the storage of such assemblies prior to and subsequent to loading in the reactor. Plant operation using the higher enriched fuel must be demonstrated to be acceptable by a cycle-specific reload safety evaluation performed prior to each fuel loading.

The proposed action is in accordance with the licensee's application for amendment dated July 5, 1990 as revised July 10, 1990.

The Need for the Proposed Action

The licensee intends to increase the fuel enrichment for the Kewaunee Nuclear Power Plant to 49.2 grams of Uranium-235 per axial centimeter of fuel

assembly. This enrichment increase is necessary to obtain fuel management flexibility necessary to effectively implement the reactor vessel flux reduction program. The flux reduction program, which was developed in response to the pressurized thermal shock rule, 10 CFR 50.61, will extend the useful life of the Kewaunee reactor vessel and facilitate potential life extension and license renewal efforts. Other benefits from higher fuel enrichments include deferral of the depletion of on-site spent fuel storage capacity and reduced fuel costs.

Environmental Impacts of the Proposed Action

The Commission has completed its evaluation of the proposed revision to the TSs. The proposed amendment would allow the reload and storage of enriched fuel of 4.75 w/o U-235. Plant operation using the higher enrichment fuel assemblies would be demonstrated to be acceptable by a cycle-specific reload safety evaluation performed prior to each fuel reloading. The use of fuel with a maximum enrichment of 4.75 w/o U-235 would not significantly increase the probability or consequences of any accidents previously analyzed. No significant changes in the types or amounts of radiological effluents during normal operation or postulated accidents that may be released offsite are incurred by the increased w/o fuel enrichment. As a result, no significant increase or cumulative occupational radiation exposure is noted.

The environmental impacts of transportation resulting from the use of higher enrichment and extended irradiation are discussed in the staff assessment entitled "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation." This assessment was published in the Federal Register on August 11, 1988 (53 FR 30355) as corrected on August 24, 1988 (53 FR 32322) in connection

with the Shearon Harris Nuclear Power Plant, Unit 1: Environmental Assessment and Finding of No Significant Impact. As indicated therein, the environmental cost contribution of an increase in fuel enrichment of up to 5 weight percent U-235 and irradiation limits of up to 60 Gigawatt Days per Metric Ton (GWD/MT) are either unchanged, or may in fact be reduced from those summarized in Table S-4 as set forth in 10 CFR 51.52(c). These findings are applicable to this proposed amendment for the Kewaunee Nuclear Power Plant.

Therefore, since the proposed changes do not increase the probability or consequences of accidents, no changes are being made in the types or amounts of any radiological effluents that may be released offsite, and there is no significant increase in the allowable individual or cumulative occupational radiation exposure, the Commission concludes that this proposed action would result in no significant radiological environmental impact.

With regard to potential nonradiological impacts, the proposed change to the TS involves systems located within the restricted area as defined by 10 CFR Part 20. The proposed change will not result in a measurable change to the nonradiological plant effluents and therefore will not have any environmental impact. Therefore, the Commission concludes that there are no significant nonradiological environmental impacts associated with the proposed amendment.

The Notice of Consideration of Issuance of Amendment Proposed No Significant Hazards Consideration and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on August 22, 1990 (55 FR 34385).

No request for hearing or petition for leave to intervene was filed following this notice.

Alternative to the Proposed Action

Since the Commission concluded that there are no significant environmental effects that would result from the proposed action, any alternatives with equal or greater environmental impacts need not be evaluated.
The principal alternative would be to deny the requested amendment. This would not reduce environmental impacts of plant operation and would result in reduced operational flexibility.

Alternative Use of Resources

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for the Kewaunee Nuclear Power Plant dated December 1972.

Agencies and Persons Consulted

The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for the proposed license amendment.

Based upon the foregoing environmental assessment, we conclude that the proposed action will not have a significant effect on the quality of the human environment.

For further details with respect to this action, see the application for amendment dated July 5, 1990, and revision dated July 10, 1990 which are

available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C. and at the University of Wisconsin Library Learning Center, 2420 Nicolet Drive, Green Bay, Wisconsin 54301.

Dated at Rockville, Maryland, this 28th day of February 1991.

FOR THE NUCLEAR REGULATORY COMMISSION

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