

November 27, 1998

Mr. Mark L. Marchi  
Site Vice President - Kewaunee Plant  
Wisconsin Public Service Corporation  
P.O. Box 19002  
Green Bay, WI 54307-9002

SUBJECT: KEWAUNEE - ENVIRONMENTAL ASSESSMENT AND FINDING OF NO  
SIGNIFICANT IMPACT RELATED TO APPLICATION FOR AMENDMENT DATED  
APRIL 15, 1998 (TAC NO. MA1557)

Dear Mr. Marchi:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your amendment application dated April 15, 1998, as supplemented by letters dated July 27, August 13, September 28, and November 24, 1998. The proposed amendment would revise fuel operating limits in support of the Cycle 23 and future reload core designs. Also included in the proposed amendment is the removal, from the current licensing basis, of the fuel pool turbine missile hazards analysis.

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

Sincerely,

Original signed by:

William O. Long, Sr. Project Manager  
Project Directorate III-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-305

Enclosure: Environmental Assessment

cc w/encl: See next page

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NAME	WLong	✓	EBarnhill	ED		TEssig*	WLong	CCarpenter
DATE	11/23/98		11/25/98		1/98	11/23/98	11/23/98	11/25/98

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

November 27, 1998

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Sincerely,

A handwritten signature in black ink that reads "William O. Long".

William O. Long, Sr. Project Manager  
Project Directorate III-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-305

Enclosure: Environmental Assessment

cc w/encl: See next page

M. L. Marchi  
Wisconsin Public Service Corporation

Kewaunee Nuclear Power Plant

cc:

Foley & Lardner  
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One South Pinckney Street  
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Madison, WI 53701-1497

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Environmental Review Coordinator  
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Chicago, IL 60604-3590

Chairman  
Town of Carlton  
Route 1  
Kewaunee, WI 54216

Harold Reckelberg, Chairman  
Kewaunee County Board  
Kewaunee County Courthouse  
Kewaunee, WI 54216

Attorney General  
114 East, State Capitol  
Madison, WI 53702

U.S. Nuclear Regulatory Commission  
Resident Inspectors Office  
Route #1, Box 999  
Kewaunee, WI 54216-9511

Regional Administrator - Region III  
U.S. Nuclear Regulatory Commission  
801 Warrenville Road  
Lisle, IL 60532-4531

James D. Loock, Chief Engineer  
Public Service Commission  
of Wisconsin  
P. O. Box 7854  
Madison, WI 53707-7854

UNITED STATES NUCLEAR REGULATORY COMMISSIONWISCONSIN PUBLIC SERVICE CORPORATIONWISCONSIN POWER AND LIGHT COMPANYMADISON GAS AND ELECTRIC COMPANYKEWAUNEE NUCLEAR POWER PLANTDOCKET NO. 50-305ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Operating License DPR-43, issued to Wisconsin Public Service Corporation, Wisconsin Power and Light Company, and Madison Gas and Electric Company (the licensee), for the Kewaunee Nuclear Power Plant located in Kewaunee County, Wisconsin.

ENVIRONMENTAL ASSESSMENTIdentification of the Proposed Action:

The proposed action would revise the reactor core power distribution peaking factor limits and reactor coolant system operating parameters related to the minimum departure from nucleate boiling ratio safety limit. These proposed changes are the result of analyses performed in support of use of new type fuel assemblies. The new fuel assemblies would be operated within these new thermal-hydraulic and power distribution limits with potential fuel assembly burnups to 59 GWD/MTU and maximum rod average burnup limited to 60 GWD/MTU. Another change included in the proposed amendment is the removal, from the current licensing basis, of the fuel pool turbine missile hazards analysis.

The proposed action is in accordance with the licensee's application for amendment dated April 15, 1998, as supplemented by letters dated July 27 and August 13, 1998, by two different

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letters dated September 28, 1998, and by a letter dated November 24, 1998.

The Need for the Proposed Action:

The proposed action is needed in order for the licensee to have the flexibility to use fuel with increased burnup and to revise the plant safety analyses. The changes in operating parameters and limits will allow longer operating cycles and result in fewer fuel assemblies being needed.

Environmental Impacts of the Proposed Action:

The staff has completed its evaluation of the proposed action and made the following findings: (1) the mechanical design of the fuel has been evaluated and found acceptable for use within the analyzed limits, (2) although the extended burnup to 60 GWD/MTU may slightly change the mix of radionuclides that might be released in the event of an accident, analyses of radiological consequences of accidents confirm that there is no significant increase in the probability or consequences of accidents, (3) no significant changes would be made in the amounts or types of any radiological effluents that may be released offsite, (4) there is no significant increase in the allowable individual or cumulative occupational radiation exposure, and (5) the probability of high trajectory turbine missiles impacting the spent fuel pool target area has been found to be so insignificant that the event need not be further considered as a design basis event.

On February 29, 1988 (53 FR 6041), the staff published "Extended Burnup Fuel Use in Commercial LWR's; Environmental Assessment and Finding of No Significant Impact." This generic environmental assessment of extended fuel burnup in light water reactors found that "no significant adverse effects will be generated by increasing the present batch-average burnup level of 33 GWD/MTU to 50 GWD/MTU or above as long as the maximum rod average burnup level of any fuel rod is no greater than 60 GWD/MTU." In addition, the environmental

impacts of transportation resulting from the use of higher enrichment fuel and extended irradiation were published and discussed in the staff assessment entitled, "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation," dated July 7, 1988. That assessment was published in connection with an Environmental Assessment related to the Shearon Harris Nuclear Plant, Unit 1, which was published in the Federal Register (53 FR 30355) on August 11, 1988, as corrected on August 24, 1988 (53 FR 32322). In these assessments, collectively, the staff concluded that the environmental impacts summarized in Table S-3 of 10 CFR 51.51 and in Table S-4 of 10 CFR 51.52 for a burnup level of 33 GWD/MTU are conservative and bound the corresponding impacts for burnup levels up to 60 GWD/MTU. These findings are applicable to the proposed action at Kewaunee which will limit burnup to 60 GWD/MTU.

With regard to potential non-environmental impacts, the proposed action involves components located entirely within the restricted area as defined by 10 CFR Part 20. It does not affect non-radiological plant effluents and has no other environmental impact. The proposed action does not involve any of the historic sites located in the vicinity of Kewaunee as identified in Section II.C of the Kewaunee Final Environmental Statement. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

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

Alternatives to the Proposed Action:

Since the Commission concluded that there are no significant environmental effects that would result from the proposed action, any other alternative would have greater environmental impacts and need not be evaluated.

The principal alternative would be to deny the requested amendment. This would not

reduce the environmental impact of plant operations 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 which was issued December 20, 1972.

Agencies and Persons Consulted:

In accordance with its stated policy, on November 19, 1998, the staff consulted with Sarah Jenkins, an official of the Public Service Commission of the State of Wisconsin, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

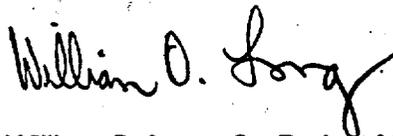
On the basis of the environmental assessment, the staff concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the staff has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's application dated April 15, 1998, as supplemented by letters dated July 27, August 13, September 28, and November 24, 1998, which are available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW, Washington, D.C., and at the local

public document room located at the University of Wisconsin, Cofrin Library, 2420 Nicolet Drive,  
Green Bay, Wisconsin 54311-7001.

Dated at Rockville, Maryland, this 25th day of November 1998.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink that reads "William O. Long". The signature is written in a cursive style with a large, stylized initial 'W'.

William O. Long, Sr. Project Manager  
Project Directorate III-1  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

11/22/78

MEMORANDUM TO: Rules and Directives Branch  
Division of Administrative Services  
Office of Administration  
FROM: Office of Nuclear Reactor Regulation  
SUBJECT: *to wanner*

One signed original of the *Federal Register* Notice identified below is attached for your transmittal to the Office of the Federal Register for publication. Additional conformed copies ( ) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for submission of Views on Antitrust matters.
- Notice of Consideration of Issuance of Amendment to Facility Operating License. (Call with 30-day insert date).
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).
- Order.
- Exemption.
- Notice of Granting Exemption.
- Environmental Assessment.
- Notice of Preparation of Environmental Assessment.
- Receipt of Petition for Director's Decision Under 10 CFR 2.206.
- Issuance of Final Director's Decision Under 10 CFR 2.206.
- Other: \_\_\_\_\_

DOCKET NO.

Attachment(s): As stated

Contact: 50-305  
Telephone:

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