May 26, 1989

Docket No. 50-305

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Mr. Clark R. Steinhardt
Manager - Nuclear Power
Wisconsin Public Service Corporation
Post Office Box 19002
Green Bay, Wisconsin 54307-9002

Dear Mr. Steinhardt:

SUBJECT: AMENDMENT NO. 82 TO FACILITY OPERATING LICENSE NO. DPR-43
(TAC NO. 61593)

The Commission has issued the enclosed Amendment No. 82 to Facility Operating License No. DPR-43 for the Kewaunee Nuclear Power Plant. This amendment changes the license in response to your application dated May 23, 1986.

The amendment changes the expiration date for Facility Operating License No. DPR-43 from August 6, 2008 to December 21, 2013.

A copy of the Safety Evaluation is also enclosed. Notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

/s/

Joseph G. Giitter, Project Manager
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 82 to
License No. DPR-43
2. Safety Evaluation

cc w/enclosures:
See next page

Office:	LA/PDIII-3	PM/PDIII-3	PD/PDIII-3	OGC-WF1
Surname:	PKreutzer	JGiitter/tg	JHannon	
Date:	5/3/89	5/5/89	5/5/89	5/10/89

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Mr. Clark R. Steinhardt
Wisconsin Public Service Corporation

Kewaunee Nuclear Power Plant

cc:
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Foley and Lardner
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Glen Kunesh, Chairman
Town of Carlton
Route 1
Kewaunee, Wisconsin 54216

Mr. Harold Reckelberg, Chairman
Kewaunee County Board
Kewaunee County Courthouse
Kewaunee, Wisconsin 54216

Chairman
Public Service Commission of Wisconsin
Hill Farms State Office Building
Madison, Wisconsin 53702

Attorney General
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Madison, Wisconsin 53702

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

Regional Administrator - Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Mr. Robert S. Cullen
Chief Engineer
Wisconsin Public Service Commission
P.O. Box 7854
Madison, Wisconsin 53707

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

WISCONSIN PUBLIC SERVICE CORPORATION

WISCONSIN POWER AND LIGHT COMPANY

MADISON GAS AND ELECTRIC COMPANY

DOCKET NO. 50-305

KEWAUNEE NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 82
License No. DPR-43

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Wisconsin Public Service Corporation, Wisconsin Power and Light Company, and Madison Gas and Electric Company (the licensees) dated May 23, 1986 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, Facility Operating License No. DPR-43 is hereby amended by changing paragraph E to read as follows:

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E. This license is effective as of the date of issuance, and shall expire at midnight on December 21, 2013.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Warren H. Swenson

for: John N. Hannon, Director
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Date of Issuance: May 26, 1989

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATING TO AMENDMENT NO. 82 TO FACILITY OPERATING LICENSE NO. DPR-43

WISCONSIN PUBLIC SERVICE CORPORATION

WISCONSIN POWER AND LIGHT COMPANY

MADISON GAS AND ELECTRIC COMPANY

KEWAUNEE NUCLEAR POWER PLANT

DOCKET NO. 50-305

1.0 INTRODUCTION

By application dated May 23, 1986, Wisconsin Public Service Corporation (WPSC) requested an amendment to Facility Operating License No. DPR-43 for the Kewaunee Nuclear Power Plant. The proposed amendment would change the expiration date for the license from August 6, 2008 to December 21, 2013.

2.0 DISCUSSION

Section 103.c of the Atomic Energy Act of 1954 provides that the license is to be issued for a specified period not exceeding 40 years. The Code of Federal Regulations at 10 CFR 50.51 specifies that each license will be issued for a fixed period of time, to be specified in the license, not to exceed 40 years from the date of issuance. Section 50.57 of 10 CFR allows the issuance of an operating license pursuant to 10 CFR 50.56 for the period specified in 10 CFR 50.51 after the construction of the facility has been substantially completed, in conformity with the construction permit and when other provisions specified in 10 CFR 50.57 are met. The current term of the license for the Kewaunee Nuclear Power Plant is 40 years commencing with the issuance of the construction permit. Accounting for the time that was required for plant construction, this represents an effective operating term of only 35 years. Consistent with Section 103.c of the Atomic Energy Act of 1954 and 10 CFR Parts 50.51, 50.56 and 50.57 of the Commission's regulations, the licensee, by its application dated May 23, 1986, seeks an extension of the operating license term for the Kewaunee Nuclear Power Plant such that the fixed period of the license would be 40 years from the date of issuance of the operating license.

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3.0 EVALUATION

The licensee's request for extension of the operating license is based on the fact that a 40-year service life was considered during the design and construction of the plant. This does not mean that some components will not wear out during the plant lifetime. However, the reactor coolant system components and support systems are analyzed for the integrated effects of radiation damage and cyclic loadings (with added margin) which could reasonably be expected to occur in a 40 year lifetime. Surveillance and inspection programs have been implemented in accordance with ASME Code for Inservice Inspection and Inservice Testing of Pumps and Valves and Technical Specification requirements to provide assurance that any unexpected degradation in plant equipment will be identified and corrected. The specific provisions and requirements for ASME Code testing are set forth in 10 CFR 50.55a.

The design of the reactor vessel and its internals considered the effects of 40 years of operation at full power and a comprehensive vessel material surveillance program is maintained in accordance with 10 CFR Part 50, Appendix H. The schedule for reactor vessel surveillance capsule removal is contained in Table 4.4-2 of the USAR.

Further, in addition to the reactor vessel material surveillance program requirements of 10 CFR Part 50, Appendix H, which ensure that the fracture toughness requirements of Appendix G are met, 10 CFR 50.61 provides fracture toughness requirements designed to protect against pressurized thermal shock (PTS). The staff has completed its analysis related to the PTS rule for Kewaunee Nuclear Power Plant. By letter dated May 26, 1989, the staff transmitted our Safety Evaluation to the licensee indicating that the most critical weld materials for Kewaunee meet the criterion of 10 CFR 50.61 for the current license expiration date as well as the requested license extension to a 40-year operating life.

Aging analyses have been performed for all safety-related electrical equipment in accordance with 10 CFR 50.49, "Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants," identifying qualified lifetimes for this equipment. These lifetimes have been incorporated into plant equipment maintenance and replacement practices to ensure that all safety-related electrical equipment remains qualified and available to perform its safety related function regardless of the overall age of the plant.

The staff's Safety Evaluation for environmental qualification of safety-related electrical equipment was issued in a letter dated September 11, 1984. A subsequent audit of the program was conducted March 9, 1987 through April 3, 1987, by Region III, the results of which are documented in an Inspection Report dated April 22, 1987.

While some deficiencies were noted, which the licensee has subsequently corrected, the staff has concluded and the inspection team verified that the licensee had implemented an environmental qualification program meeting the requirements of 10 CFR 50.49. The staff published its original Safety Evaluation for Kewaunee on July 24, 1972. While several changes have been made to the plant design since the original plant construction was completed, such as a spent fuel pool modification, major changes for fire protection in response to Appendix R, many TMI Task Action Plan modifications and various other less major design changes, each of these changes where it involved a safety-related component has been reviewed and approved by the staff with the details being documented in the staff's related Safety Evaluation. Further, as required by 10 CFR 50.71(e), these changes and their effect on accident analyses, if any, are routinely updated in the FSAR. Our review of the original Safety Evaluation and Addenda and the FSAR for the facility has not identified any concerns associated with approval of the proposed amendment to extend the expiration date of the license that are not already addressed by licensee commitments, operating procedures, and license requirements.

The Kewaunee site consists of a tract of land containing approximately 908 acres. The licensee owns all of the site area with the exception of one cemetery site (1.13 acres, owned by the Town of Carlton) and State and county highways which traverse the site. The Exclusion radius is 1200 meters and the Exclusion Area falls within the site boundary. The licensee does not own that area of Lake Michigan lying within the 1200 meter exclusion zone, but will rely on the U. S. Coast Guard to control access to this area in the event of an accident. The staff's earlier findings with respect to compliance with 10 CFR 100.3 are unchanged. The licensee has the authority to control activities within the Exclusion Area during the extended license period. Kewaunee is located in a low density population area. The population in the area surrounding the site was projected in the Environmental Statement to the year 2010. The license extension is for 3 years beyond the projected 2010 date. Using the growth rate assumed in the Environmental Statement, the projected increase in population is insignificant. For example, for Kewaunee County, the difference between the 2013 and 2010 projected populations is only 106 people (22,004 total people). The actual growth rate over the last decade has, however, been substantially less than that projected in the Environmental Statement and the population originally projected for the year 2010 considerably exceeds that which would now be projected using the actual growth rate over the last decade. Further details of the staff's review are contained in the associated Environmental Assessment dated May 11 , 1989.

Accordingly, the Commission's conclusions in the July 24, 1972 Safety Evaluation regarding 10 CFR Part 100 siting criteria for the Kewaunee Nuclear Power Plant, that the Exclusion Area, LPZ and population center distances meet the guidelines of 10 CFR Part 100, are not changed by the proposed license extension and the Kewaunee site continues to be acceptable.

Based on the above, it is concluded that the extension of the operating license for the Kewaunee Nuclear Power Plant to allow a 40-year service life is consistent with the safety analysis in that all issues associated with plant aging and population changes have already been addressed. Accordingly, the staff finds the proposed extension of the expiration date of the Facility Operating License for the Kewaunee Nuclear Power Plant to be acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact has been prepared and published in the Federal Register on May 18, 1989 (54 FR 21510). Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant effect on the quality of the human environment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Giitter

Dated: May 26, 1989