

July 10, 1986

Docket No. 50-305

Mr. D. C. Hintz  
Manager, Nuclear Power  
Wisconsin Public Service Corporation  
Post Office Box 19002  
Green Bay, Wisconsin 54307-9002

Dear Mr. Hintz:

The Commission has issued the enclosed Amendment No. 68 to Facility Operating License No. DPR-43 for the Kewaunee Nuclear Power Plant. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated April 15, 1986.

The amendment changes the frequency of loading the diesel generators to their short-term rating from once each month to once each refueling cycle and completes our TAC No. 61288.

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

Sincerely,

*/s/*

Morton B. Fairtile, Project Manager  
Project Directorate #1  
Division of PWR Licensing-A

Enclosures:

- 1. Amendment No. 68 to DPR-43
- 2. Safety Evaluation

cc: w/enclosures  
See next page

*change in  
SEC 12  
7/3/86*

Office: LA/PAD#1  
Surname: PShuttleworth *MWR*  
Date: 06/24/86

PM/PAD#1  
*M. Fairtile*  
06/30/86

OELD  
*Pup*  
06/3/86  
*of connecting  
metal*

PD/PAD#1  
GLear *GL*  
07/19/86

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Mr. D. C. Hintz  
Wisconsin Public Service Corporation

Kewaunee Nuclear Power Plant

cc:

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Foley and Lardner  
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Town of Carlton  
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Mr. Donald L. Quistroff, Chairman  
Kewaunee County Board  
Kewaunee County Courthouse  
Kewaunee, Wisconsin 54216

Chairman  
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Madison, Wisconsin 53702

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Mr. Robert S. Cullen  
Chief Engineer  
Wisconsin Public Service Commission  
P.O. Box 7854  
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Distribution Copies:

Docket File 50-305

NRC PDR

Local PDR

PAD#1 r/f

PAD#1 p/f

TNovak, Actg Div Dir

GLear

RDudley

PShuttleworth

NThompson, DHFT

OELD

LHarmon

EJordan

BGrimes

JPartlow

EButcher, TSCB

TBarnhart (4)

WJones

FOB, DPLA

Tech Branch that had input in package

ACRS (10)

OPA

LFMB (w/cy of TAC w/Amd No. & date issued)



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 PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 68  
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 April 15, 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. This 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, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-43 is hereby amended to read as follows:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 68, are hereby incorporated in the license. The licensees shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

*Morton B. Fairtile*

Morton B. Fairtile, Project Manager  
Project Directorate #1  
Division of PWR Licensing-A

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: July 10, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 68  
TO FACILITY OPERATING LICENSE NO. DPR-43  
DOCKET NO. 50-305

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

4.6-1  
4.6-2  
4.6-3  
4.6-4

INSERT

4.6-1  
4.6-2  
4.6-3  
4.6-4

## 4.6 PERIODIC TESTING OF EMERGENCY POWER SYSTEM

### Applicability

Applies to periodic testing and surveillance requirements of the emergency power system.

### Objective

To verify that the emergency power sources and equipment are operable.

### Specification

The following tests and surveillance shall be performed:

#### a. Diesel Generators

1. Manually-initiated start of each diesel generator, and assumption of load by the diesel generator. This test shall be conducted monthly, loading the diesel generator to at least 2600 KW (nominal) for a period of at least 1 hour.
2. Automatic start of each diesel generator, load shedding, and restoration to operation of particular vital equipment, all initiated by a simulated loss of all normal a-c station service power supplies together with a simulated safety injection signal. This test will be conducted at each refueling interval to assure that each diesel generator will start and assume required loads to the extent possible within one minute, and operate for  $\geq 5$  minutes while loaded with the emergency loads.
3. Each diesel generator shall be inspected at each major refueling outage.
4. Diesel generator load rejection test in accordance with IEEE 387-1977, section 6.4.5 shall be performed at least once per 18 months.
5. Each diesel generator shall be loaded to 2950 KW (nominal) for 2 hours every operating cycle, not to exceed 18 months.

6. Safeguard Bus Undervoltage and Safeguard Bus Second Level Undervoltage relays shall be calibrated at least once per operating cycle (not to exceed 18 months).
7. During each operating cycle (not to exceed 18 months), a checkout of emergency lighting will be performed.

b. Station Batteries

1. The voltage of each cell shall be measured to the nearest hundredth volt each month. An equalizing charge shall be applied if the lowest cell in the battery falls below 2.13 volts. The temperature and specific gravity of a pilot cell in each battery shall be measured.
2. The following additional measurements shall be made every three months: the specific gravity and height of electrolyte in every cell and the temperature of every fifth cell.
3. All measurements shall be recorded and compared with previous data to detect signs of deterioration.
4. The batteries shall be subjected to a load test during the first refueling and once every five years thereafter. Battery voltage shall be monitored as a function of time to establish that the battery performs as expected during heavy discharge and that all electrical connections are tight.

BASIS TECHNICAL SPECIFICATION 4.6, PERIODIC TESTING OF EMERGENCY POWER SYSTEMS

Each diesel generator can start and be ready to accept full load within 10 seconds, and will sequentially start and supply the power requirements for one complete set of engineered safety features equipment in approximately one minute.(1)

The specified test frequencies provide reasonable assurance that any mechanical or electrical deficiency will be detected and corrected before it can result in failure of one emergency power supply to respond when called upon to function. Its possible failure to respond is, of course, anticipated by providing two diesel generators, each supplying through an independent bus, a complete and adequate set of engineered safety features equipment. Further, both diesel generators are provided as backup to multiple sources of external power, and this multiplicity of sources should be considered with regard to adequacy of test frequency.

BASIS TECHNICAL SPECIFICATION 4.6.a.1, MONTHLY DIESEL GENERATOR SURVEILLANCE

The monthly tests specified for the diesel generators will demonstrate their continued capability to start and carry rated load. The fuel supplies and starting circuits and controls are continuously monitored, and abnormal conditions in these systems would be indicated by an alarm without need for test startup. Monthly tests are performed in accordance with the intent of IEEE 387-1977, paragraph 6.6.1.

BASIS TECHNICAL SPECIFICATION 4.6.a.2, REFUELING INTERVAL  
DIESEL GENERATOR SURVEILLANCE

The refueling interval diesel generator surveillance demonstrates that the emergency power system, and its control system, will function automatically to provide engineered safety equipment power in the event of loss of offsite power coincident with a safety injection signal. This test demonstrates proper tripping of motor feeder breakers, main supply and tie breakers on the affected bus, and sequential starting of essential equipment to demonstrate operability of the diesel generators. This surveillance is performed to meet the intent of IEEE 387-1977 paragraph 6.6.2. (Note also that Reg. Guide 1.108 addresses diesel generator surveillance.)

A separate test demonstrates that the emergency lighting system is operable.

BASIS TECHNICAL SPECIFICATION 4.6.a.3, REFUELING INTERVAL  
DIESEL GENERATOR INSPECTION

Inspections are performed at refueling outage intervals in order to maintain the diesel generators in accordance with the manufacturers' recommendations. The inspection procedure is periodically updated to reflect experience gained from past inspections and new information as it is available from the manufacturer.

BASIS TECHNICAL SPECIFICATION 4.6.a.4, 18-MONTH LOAD REJECTION TEST

The load rejection test demonstrates the capability of rejecting the maximum rated load without overspeeding or attaining voltages which would cause the diesel generator to trip, mechanical damage, or harmful overstresses.

BASIS TECHNICAL SPECIFICATION 4.6.a.5, OPERATING CYCLE SHORT-TERM LOAD TEST

Loading the diesel generators to their short-term rating will demonstrate their capability to provide a continuous source of emergency AC power during a load perturbation of up to 112% of the diesel generator's continuous rating.

BASIS TECHNICAL SPECIFICATION 4.6.b STATION BATTERIES

Station batteries will deteriorate with time, but precipitous failure is extremely unlikely. The surveillance specified is that which has been demonstrated over the years to provide indication of a cell becoming unserviceable long before it fails.

If a battery cell has deteriorated, or if a connection is loose, the voltage under load will drop excessively, indicating need for replacement or maintenance.

Reference

- (1) UFSAR Section 8.2



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 68 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

Introduction

By letter dated April 15, 1986, Wisconsin Public Service Corporation, et. al., proposed a change to its Technical Specifications for the Kewaunee Nuclear Power Plant which in effect would change the frequency of loading the diesel generators to their short-term rating from once each month to once each refueling cycle. The present Technical Specifications for monthly surveillance incorrectly references Paragraph 6.4.3 of IEEE Std. 387-1977 which applies to refueling cycle surveillance.

Evaluation

Technical Specification 4.6.a.1. presently states that tests will be conducted monthly in accordance with the intent of Paragraph 6.4.1 and 6.4.3 of IEEE 387-1977. The licensees propose to replace the words "in accordance with the intent of Paragraph 6.4.1 and 6.4.3 of IEEE 387-1977" with the words "loading the diesel generator to at least 2600 KW (nominal) for a period of at least 1 hour." In addition, the applicants propose to add Technical Specification 4.6.a.5 as follows:

- "5. Each diesel generator shall be loaded to 2950 KW (nominal) for 2 hours every operating cycle, not to exceed 18 months."

The effect of the changes would be to apply the continuous rating load test on a monthly cycle and a short-term rating load test on a refueling cycle basis. We find that these changes are consistent with Paragraph 6.6.1 of IEEE Std. 387-1977, which requires monthly tests at the lower continuous rating, and Paragraph 6.6.2 of IEEE Std. 387-1977, which requires less frequent tests at the higher short-term rating. We also find that the proposed testing frequencies are consistent with Regulatory Guide 1.108.

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The licensees also propose changes in the descriptive section (Basis) of Technical Specification 4.6.a. We have reviewed these descriptive changes and note their effect is to add to or clarify the purpose of the diesel generator testing. We find these changes acceptable.

#### Summary and Conclusion

Staff agrees that the licensees' proposed change in Technical Specification 4.6.a for the diesel generators is consistent with IEEE Std. 387-1977 and Regulatory Guide 1.108. A continuous rating load test will be performed on a monthly basis, whereas the short-term rating load test will be performed on a refueling cycle basis, not to exceed 18 months. We conclude that the proposed Technical Specification change will not adversely affect the health and safety of the public and that the proposed change is acceptable.

#### Environmental Consideration

This amendment involves a change to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

#### Conclusion

We have 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:  
A. Toalston

Date: July 10, 1986