

July 8, 1987

Docket No. 50-305

Mr. D. C. Hintz
Vice President - Nuclear Power
Wisconsin Public Service Corp.
P.O. Box 19002
Green Bay, Wisconsin 54037-9002

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Dear Mr. Hintz:

The Commission has issued the enclosed Amendment No. 75 to Facility Operating License No. DPR-43 for the Kewaunee Nuclear Power Plant. This amendment is in response to your applications dated April 18 and June 24, 1986 and January 13, 1987.

The amendment implements technical specifications for the independent testing of the undervoltage and shunt trip attachments of the reactor trip breakers during power operation, testing of the bypass breakers prior to use, and independent testing of the control room manual switch contacts and wiring during each refueling outage.

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

Sincerely,

Theodore R. Quay, Project Manager
Project Directorate III-3
Division of Reactor Projects

Enclosures:

1. Amendment No. 75 to License No. DPR-43
2. Safety Evaluation

cc w/enclosures:
See next page

Office: LA/PDIII-3
Surname: PKreutzer
Date: 6/24/87

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Mr. D. C. Hintz
Wisconsin Public Service Corporation

Kewaunee Nuclear Power Plant

cc:

David Baker, Esquire
Foley and Lardner
P. O. Box 2193
Orlando, Florida 32082

Stanley LaCrosse, 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
114 East, State Capitol
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. 75
License No. DPR-43

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Wisconsin Public Service Corporation, Wisconsin Power and Light Company, and Madison Gas and Electric Company (the licensees) dated April 18 and June 24, 1986 and January 13, 1987 comply 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 applications, 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, 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:

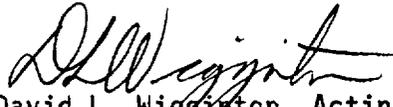
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(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 75, 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



David L. Wigginton, Acting Project Director
Project Directorate III-3
Division of Reactor Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 8, 1987

ATTACHMENT TO LICENSE AMENDMENT NO.75

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 amendment number and contain marginal lines indicating the area of change.

REMOVE

TS 1.1-7
TS 3.5-2
Table 3.5-2 (Page 2 of 3)
Table TS 4.1-3 (Page 1 of 2)
Table TS 4.1-3 (page 2 of 2)

INSERT

TS 1.1-7
TS 3.5-2
Table 3.5-2 (Page 2 of 3)
Table TS 4.1-3 (Page 1 of 2)
Table TS 4.1-3 (Page 2 of 2)

system is not considered to have any effect on noble gas effluents. Engineered Safety Feature atmospheric cleanup systems (i.e., Auxiliary Building special ventilation, Shield Building ventilation, spent fuel pool ventilation) are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.

10. Venting

VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating conditions, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, as used in system names, does not imply a VENTING process.

11. Radiological Environmental Monitoring Manual (REMM)

The REMM shall contain the current methodology and parameters used in the conduct of the radiological environmental monitoring program.

p. Standard Shutdown Sequence

When a Limiting Condition for Operation is not met, and a plant shutdown is required except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 36 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of determination of the failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual Specifications.

This Specification is not applicable when the plant is in cold or refueling shutdown.

Basis

Instrumentation has been provided to sense accident conditions and to initiate operation of the engineered safety features.⁽¹⁾ Section 2.3 of these specifications describes the limiting safety system settings for the protective instrumentation.

Safety Injection

Safety injection can be activated automatically or manually to provide additional water to the reactor coolant system or to increase the concentration of boron in the coolant.

Safety injection is initiated automatically by (1) low pressurizer pressure, (2) low main steam line pressure in either loop and (3) high containment pressure. Protection against a Loss-of-Coolant Accident is primarily through signals (1) and (3). Protection against a Steam Line Break is primarily by means of signal (2).

Manual actuation is always possible. Safety Injection signals can be blocked during those operating modes where they are not "required" for safety and where their presence might inhibit operating flexibility; they are generally restored automatically on return to the "required" operating mode.

Reactor Trip Breakers

With the addition of the automatic actuation of the shunt trip attachment, diverse features exist to effect a reactor trip for each reactor trip breaker. Since either trip feature being operable would initiate a reactor trip on demand, the flexibility is provided to allow plant operation on a reactor trip breaker (with either trip feature inoperable) for up to 72 hours. This specification also requires the plant to proceed to the hot shutdown condition in accordance with the Kewaunee standard shutdown sequence if a reactor trip breaker is bypassed for greater than 8 hours.

TABLE TS 3.5-2

INSTRUMENT OPERATION CONDITIONS FOR REACTOR TRIP
(Page 2 of 3)

NO.	FUNCTIONAL UNIT	1	2	3	4	5	6
		NO. OF CHANNELS	NO. OF CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS	MINIMUM DEGREE OF REDUNDANCY	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 3 OR 4 CANNOT BE MET
8	High Pressurizer Pressure	3	2	2	-		Maintain hot shutdown
9	Pressurizer High Water Level	3	2	2	-	P-7	Maintain hot shutdown
10	Low Flow In One Loop	3/loop	2/loop (any loop)	2	-	P-8	Maintain hot shutdown
	Low Flow Both Loops	3/loop	2/loop (both loops)	2	-	P-7	Maintain hot shutdown
11	Deleted						
12	Lo-Lo Steam Generator Water Level	3/loop	2/loop	2/loop	-		Maintain hot shutdown
13	Undervoltage 4-KV Bus	2/bus	1/bus (both buses)	1/bus	-	P-7	Maintain hot shutdown
14	Underfrequency 4-KV Bus (4)	2/bus	1/bus (both buses)	1/bus	-		Maintain hot shutdown
15	Deleted						
16	Steam Flow/Feedwater Flow Mismatch	2	1	1	-		Maintain hot shutdown
17	Reactor Trip Breaker (RTB)	2	1	2	-	The RTB's may be bypassed for up to 8 hrs. for surveillance testing or maintenance	Maintain hot shutdown and open the TRB's
	(Independently Test Shunt and Undervoltage Trip Attachments)	2/Bkr	1	2	-		After 72 hours maintain hot shutdown and open the RTB's

Table 3.5-2 (Page 2 of 3)

Amendment No. 51, 71, 74, 75

TABLE 4.1-3
 MINIMUM FREQUENCIES FOR EQUIPMENT TESTS
 (Page 1 of 2)

<u>Equipment Tests***</u>	<u>Test</u>	<u>Frequency</u>	<u>Maximum Time Between Test (Days)</u>
1. Control Rods	Rod drop times of all full length rods	Each refueling outage	N.A.
	Partial movement of all rods	Every 2 weeks	17
1a. Reactor Trip Breakers	Independent Test ⁽²⁾ Shunt & Undervoltage Trip Attachments	Monthly	37
1b. Reactor Coolant Pump Breakers-Open-Reactor Trip	Operability	Each refueling outage	N.A.
1c. Manual Reactor Trip	Open Trip Reactor ⁽³⁾ Trip & Bypass Bkr	Each refueling outage	N.A.
2. Deleted			
3. Deleted			
4. Containment Isolation Trip	Operability	Each refueling outage	N.A.
5. Refueling System Interlocks	Operability	Prior to each refueling outage	N.A.
6. Deleted			
7. Fire Protection Pump and Power Supply	*Operability	Monthly	37
8. RCS Leak Detection	Operability	Weekly	8
9. Diesel Fuel Supply	*Fuel Inventory	Weekly	8
10. Turbine Stop and Governor Valves	Operability	Monthly ⁽¹⁾	37 ⁽¹⁾
11. Fuel Assemblies	Visual Inspection	Each refueling outage	N.A.
12. Guard Pipes	Visual Inspection	Each refueling outage	N.A.

TABLE 4.1-3

MINIMUM FREQUENCIES FOR EQUIPMENT TESTS
(Page 2 of 2)

<u>Equipment Tests***</u>	<u>Test</u>	<u>Frequency</u>	<u>Maximum Time Between Test (Days)</u>
13. Pressurizer PORV's	Operability	Each Refueling Cycle	N.A.
14. Pressurizer PORV Block Valves	Operability	Quarterly*****	N.A.
15. Pressurizer Heaters	Operability*****	Each Refueling Cycle	N.A.
16. Containment Purge and Vent Isolation Valves	Operability****	Each Refueling Cycle	N.A.

NOTES

* See Specification 4.1.d

*** Following maintenance on the above equipment that could affect the operation of the equipment tests should be performed to verify operability.

**** This test shall demonstrate that the valve(s) close in less than or equal to 5 seconds.

***** Not required when valve is administratively closed.

***** Test will verify operability of heaters and availability of an emergency power supply.

-
- (1) This test may be waived for end of cycle operations when boron concentrations are less than 150 ppm, due to operational limitations.
 - (2) Verify Operability of the Bypass Breaker Undervoltage Trip Attachment Prior to Placing Breaker Into Service.
 - (3) Using the control room pushbuttons, independently test the Reactor Trip Breakers shunt trip and undervoltage trip attachments. The test shall also verify the undervoltage trip attachment on the Reactor Trip Bypass Breakers.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 75 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

Generic Letter 85-09 (MPA B-90) concluded that Technical Specification changes should be proposed by licensees to explicitly require independent testing of the undervoltage and shunt trip attachments of the reactor trip breakers during power operation, testing of the bypass breakers prior to use, and independent testing of the control room manual switch contacts and wiring during each refueling outage.

By letter dated February 7, 1986, Wisconsin Public Service Corporation first responded to Generic Letter 85-09. While committing to the submittal of the proposed Technical Specification changes, the letter took exception to some of the specifics of Generic Letter 85-09. By letter dated April 18, 1986, the licensees furnished their proposed Technical Specification changes. Upon review, the NRC staff found certain deficiencies and noted these deficiencies in a Safety Evaluation (SE) dated May 8, 1986. After telephone discussions with the NRC staff, the licensees submitted revised Technical Specifications by letter dated June 24, 1986. Upon review, the NRC staff again found some deficiencies as discussed in a SE dated July 19, 1986. The licensees responded to that SE by letter dated January 13, 1987. The staff has reviewed this latest submittal and finds it to be acceptable as discussed below.

EVALUATION

If one of the diverse trip features (the undervoltage or shunt trip attachment of a reactor trip breaker) becomes inoperable, Generic Letter 85-09 specifies that the breaker be restored to the operable status within 48 hours or, if not, that hot standby be accomplished within 6 hours thereafter. The licensees' proposed Technical Specifications would effectively extend the 48 hours to 72 hours. The licensees' reason for extending the period to 72 hours is that the 72 hours provides consistency with Kewaunee technical specification requirements for plant shutdown associated with engineered safety feature equipment. The staff finds extension of the time that one of the diverse trip features could remain inoperable, from 48 hours to 72 hours, would have negligible impact on reliability and, therefore, the licensees' justification for extending this time is acceptable.

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The licensees' proposed Technical Specification change adds Item "p. Standard Shutdown Sequence" to the definition section (TS 1.1-7). This definition would apply when a Limiting Condition for Operation is not met and a plant shutdown is required. The definition would allow 1 hour to start the shutdown action, another 6 hours to be in Hot Standby, another 6 hours to be in Hot Shutdown, and another 36 hours to be in Cold Shutdown. The sequence would only be followed to the extent required by the Action statement. For the Reactor Trip Breaker, the Action statement indicates Hot Shutdown. Generic Letter 85-09 would require at least Hot Standby within 6 hours (Action 12 of Table 3.3-1). Generic Letter 85-09 also allows 1 hour to initiate the action (Action 11 of Table 3.3-1). Therefore, the staff finds the licensees' proposed time period to Hot Standby to be acceptable. The staff also finds the licensees' proposed time periods to Hot Shutdown and Cold Shutdown to be reasonable. For Modes 3, 4 and 5, provided the Reactor Trip Breakers (RTB's) are closed and the control rod drive system capable of rod withdrawal, Generic Letter 85-09 specifies opening of the RTB's after 48 hours. The licensees' proposed Technical Specification changes do not specify different modes. Instead, the licensees' proposed Technical Specifications would require opening the RTB's after going to Hot Shutdown. The staff finds this to be acceptable.

Generic Letter 85-09 allows an RTB channel to be bypassed for up to 2 hours for surveillance testing. The licensees' proposed Technical Specifications would allow up to 8 hours for surveillance testing or maintenance. The licensees explain in considerable detail how the logic testing for their plant requires an individual testing of each logic combination. Surveillance Procedures SP 47-062A and SP 47-062B are the procedures performed monthly to test the reactor protection system logic channels for Trains A and B, respectively. Each of these surveillance procedures is 69 pages in length and has a total of 221 procedural steps, the majority of which must be completed while operating on the bypass breakers. The testing procedure includes the testing of the protective logic relays and contacts, the reactor trip relays (each train), the reactor trip breaker devices (shunt and undervoltage), sequence event recorder, status lights, computer points and annunciators. In conducting these tests, coordination is required among the various groups involved, including operations personnel, maintenance electricians, and instrument and control technicians.

The staff believes the licensees have provided convincing justification for allowing up to 8 hours on the bypass breaker for the relay type logic and associated testing and find it to be acceptable.

Channel Item Number 26 of Table TS 4.1-1 of the present Technical Specifications provides for the protective system logic channel testing. Staff noted that there is no corresponding limiting condition for operation (LCO) or action statement in Table TS 3.5-2. Upon telephone inquiry, the licensees explained that the logic relays and contacts are associated with individual analog channels (e.g., Low Pressurizer Pressure). If a logic relay or contact fails upon test, the associated analog channel is declared inoperable and the corresponding LCO of Table T.S. 3.5-2 applies. The staff finds this to be a reasonable interpretation of the definition of "operability" for this relay type logic system and, therefore, finds it to be acceptable.

The licensees take one additional exception to the staff position of Generic Letter 85-09. Generic Letter 85-09 would require an automatic undervoltage trip of the reactor trip bypass breaker each refueling cycle. The licensees state this test is unwarranted since it does not provide any additional information concerning breaker operability with respect to the Kewaunee plant. The licensees explain that the manual reactor trip contacts are in series with the automatic reactor trip contacts. The requirement to trip the reactor trip bypass breaker each refueling outage using the manual trip push-buttons verifies the operability of the reactor trip bypass breaker and associated intervening wiring. Further, the automatic trip logic matrix which is the remaining portion of the circuit requiring testing is verified operable on a monthly basis since the same relay contact is used for tripping the reactor trip breaker and associated bypass breaker.

Upon review of the schematic wiring diagrams for Kewaunee, and the other testing that is required, the staff finds the licensees' statements convincing, and concurs that it is not necessary to perform the automatic undervoltage trip test of the reactor trip bypass breakers during refueling outages.

The staff finds that the remaining Technical Specification changes proposed by the licensees are also consistent with Generic Letter 85-09 and should increase the overall reliability and safety of the plant.

The Technical Specification changes proposed by Wisconsin Public Service Company for the Kewaunee Nuclear Power Plant in response to Generic Letter 85-09 have been reviewed and found to be acceptable. The changes should tend toward an increase in plant reliability and safety, and do not increase the probability or consequences of an accident.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, and a change to the surveillance requirements. 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 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

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.

ACKNOWLEDGEMENT

Principal Contributor: Argil Toalston

Dated: July 8, 1987