February 17, 1994

Docket No. 50-305

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Mr. C. A. Schrock
Manager - Nuclear Engineering
Wisconsin Public Service Corporation
Post Office Box 19002
Green Bay, Wisconsin 54307-9002

Dear Mr. Schrock:

SUBJECT: AMENDMENT NO. 106 TO FACILITY OPERATING LICENSE NO. DPR-43 (TAC NO. M88308)

The Commission has issued the enclosed Amendment No.106 to Facility Operating License No. DPR-43 for the Kewaunee Nuclear Power Plant (KNPP). This amendment revises the Technical Specifications (TS) in response to your application dated November 16, 1993, as supplemented December 7, 1993.

The amendment modifies KNPP TS 4.4.a.7 by deleting the requirement that couples the performance of the Type A leakage tests to the 10-year inservice inspection program requirements. This change was made to reflect the partial exemption from the requirements of 10 CFR 50, Appendix J, Section III.D.a.(a), which was granted by the NRC on February 14, 1994. In addition, administrative changes to KNPP TS Section 4.4 and its associated bases have been made.

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,
Original signed by Richard J. Laufer

Richard J. Laufer, Acting Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 106to
   License No. DPR-43
2. Safety Evaluation

cc w/enclosures:
See next page

* See previous concurrence

PD3-3:LA	PD3-3:PM	PD3-3:PM	SCSB:BC	PD3-3:PD	OGC-OWFN
MRushbrook	RLaufer	AHansen *	RBarrett *	JHannon *	EHoller *
2/1/94	2/16/94	1/ 3 /94	2/ 3 /94	1/ 3 /94	2/ 8 /94

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

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.106
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 November 16, 1993, as supplemented on December 7, 1993, 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, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 106 , 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, and is to be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John N. Hannon

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

Attachment:
Changes to the Technical Specifications

Date of issuance: February 17, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 106

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	INSERT
TS ii	TS ii
TS 4.4-1 through TS 4.4-13 (13 pages)	TS 4.4-1 through TS 4.4-7 (7 pages)
--------- ---------	TS B4.4-1 through TS B4.4-6 (6 pages)

Section	Title	Page
3.3	Engineered Safety Features and Auxiliary Systems	3.3-1
3.3.a	Accumulators	3.3-1
3.3.b	Safety Injection and Residual Heat Removal Systems	3.3-2
3.3.c	Containment Cooling Systems	3.3-4
3.3.d	Component Cooling System	3.3-6
3.3.e	Service Water System	3.3-7
3.4	Steam and Power Conversion System	3.4-1
3.5	Instrumentation System	3.5-1
3.6	Containment System	3.6-1
3.7	Auxiliary Electrical Systems	3.7-1
3.8	Refueling	3.8-1
3.9	Deleted	
3.10	Control Rod and Power Distribution Limits	3.10-1
3.10.a	Shutdown Reactivity	3.10-1
3.10.b	Power Distribution Limits	3.10-1
3.10.c	Quadrant Power Tilt Limits	3.10-6
3.10.d	Rod Insertion Limits	3.10-6
3.10.e	Rod Misalignment Limitations	3.10-7
3.10.f	Inoperable Rod Position Indicator Channels . .	3.10-7
3.10.g	Inoperable Rod Limitations	3.10-8
3.10.h	Rod Drop Time	3.10-8
3.10.i	Rod Position Deviation Monitor	3.10-8
3.10.j	Quadrant Power Tilt Monitor	3.10-8
3.10.k	Inlet Temperature	3.10-9
3.10.l	Operating Pressure	3.10-9
3.10.m	Coolant Flow Rate	3.10-9
3.11	Core Surveillance Instrumentation	3.11-1
3.12	Control Room Postaccident Recirculation System	3.12-1
3.14	Shock Suppressors (Snubbers)	3.14-1
4.0	Surveillance Requirements	4.1-1
4.1	Operational Safety Review	4.1-1
4.2	ASME Code Class In-service Inspection and Testing	4.2-1
4.2.a	ASME Code Class 1, 2, and 3 Components and Supports	4.2-1
4.2.b	Steam Generator Tubes	4.2-2
4.2.b.1	Steam Generator Sample Selection and Inspection	4.2-3
4.2.b.2	Steam Generator Tube Sample Selection and Inspection	4.2-3
4.2.b.3	Inspection Frequencies	4.2-4
4.2.b.4	Plugging Limit Criteria	4.2-5
4.2.b.5	Reports	4.2-6
4.3	Deleted	
4.4	Containment Tests	4.4-1
4.4.a	Integrated Leak Rate Tests (Type A)	4.4-1
4.4.b	Local Leak Rate Tests (Type B and C)	4.4-2
4.4.c	Shield Building Ventilation System	4.4-5
4.4.d	Auxiliary Building Special Ventilation System .	4.4-7
4.4.e	Containment Vacuum Breaker System	4.4-7

4.4 CONTAINMENT TESTS

APPLICABILITY

Applies to integrity testing of the steel containment, shield building, auxiliary building special ventilation zone, and the associated systems including isolation valves.

OBJECTIVE

To verify that leakage from the containment system is maintained within allowable limits in accordance with 10 CFR Part 50, Appendix J.

SPECIFICATION

a. Integrated Leak Rate Tests (Type A)

1. The minimum test temperature will be 50°F.

2. Integrated leak rate tests shall be performed at intervals specified in TS 4.4.a.7 at reduced pressure (P_t) of 23 psig or at a peak pressure (P_a) of 46 psig.

3. Containment leakage rates shall be determined in conformance with the criteria specified in Appendix J of 10 CFR Part 50. For tests of < 24 hours duration, the provisions of any NRC approved short duration test method such as the Bechtel Topical Report, BN-TOP-1, Revision 1 shall be met except for any section which conflicts with other Appendix J requirements.

4. All fluid systems which, under postaccident conditions, become an extension of the containment pressure boundary shall be opened to the containment atmosphere prior to the test. Systems that are required for proper conduct of the test or to maintain the plant in a safe condition during the test shall be operable in their normal mode and need not be vented or drained. Additionally, systems that are normally filled with water and operable under postaccident conditions need not be vented or drained. Closure of containment isolation valves shall be accomplished by the normal mode of operation.

5. Once the Type A test has begun, paths of excessive leakage may be isolated in order to complete the Type A test. Upon completion of the Type A test, all paths isolated due to excessive leakage shall be Type B or C leak tested. Necessary repairs shall be made and the previously isolated paths retested (Type B or C). The test results shall be reported with both the pre- and post-repair local leakage rates (corrected to test pressure) as if two Type A tests had been conducted.

6. Acceptance Criteria

   a. The maximum allowable leakage rate (L_a) is 0.5 weight percent of the contained air per 24 hours at the peak test pressure (P_a) of 46 psig.

   b. The maximum allowable leakage rate (L_t) is 0.07025 weight percent of the contained air per 24 hours at the reduced test pressure (P_t) of 23 psig.

   c. At a peak test pressure (P_a) of 46 psig, the measured leak rate (L_{am}) at the appropriate upper confidence limit (UCL) shall be < 0.75 L_a.

   d. At a reduced test pressure (P_t) of 23 psig, the measured leak rate (L_{tm}) at the appropriate UCL shall be < 0.75 L_t.

7. The frequency of periodic integrated leak rate tests subsequent to preoperational tests shall be three tests to be performed at approximately equal intervals during each 10-year period.

8. If the leak rate determined by any test exceeds the acceptance criteria in TS 4.4.a.6.c or TS 4.4.a.6.d, the test schedule applicable to subsequent integrated leak rate tests shall be subject to review and approval by the Commission. If the leak rate determined by two consecutive periodic tests exceeds the acceptance criteria in TS 4.4.a.6.c or TS 4.4.a.6.d, subsequent tests shall be performed at each major refueling outage until two consecutive tests have been performed for which the leak rate does not exceed the acceptance criteria in TS 4.4.a.6.c or TS 4.4.a.6.d.

b. Local Leak Rate Tests (Type B and C)

1. Type B & C tests as defined in 10 CFR Part 50 shall be periodically conducted at a pressure not less than 46 psig (P_a). The leak tests may be conducted utilizing pressure decay, soap bubble, halogen detection, or equivalent methods.

2. Leak tests shall be performed during, or within 1 month of, each major refueling outage, but are not to exceed 2 years between tests.

3. Local leak rate tests (Type B & C tests) may be performed during the same outage and prior to an integrated leak rate test (Type A test) provided a conservative measure of (pre-post) repair differential leakage is added to the Type A test results.

4. Air Lock Testing

   a. Each personnel air lock shall be tested at 6-month intervals utilizing a Type B test at P_a.

   b. Personnel air locks opened during periods when containment integrity is not required and is not maintained shall be tested at the end of such periods at not less than (P_a) 46 psig.

   c. Personnel air locks opened during periods when containment integrity is required or while containment integrity is maintained shall be tested within 3 days of being opened. Personnel air locks opened more frequently than once every 3 days, while containment integrity is required or maintained, shall be tested at least once every 3 days during the period of frequent openings. The 3-day test requirement is satisfied by leak testing the entire air lock with acceptance criterion stated in TS 4.4.b.4.d or leak testing the air lock door seals by pressurizing the volume between the O-rings and sealing surface to at least 10 psig with acceptance criterion of 0.005 L_a.

   d. The overall personnel air lock leakage rate, as determined by TS 4.4.b.4.a or TS 4.4.b.4.b, when combined with the present cumulative type B and C leakage shall be $< 0.6\ L_a$.

   e. The equipment hatch and the fuel transfer tube flange shall also be tested after each opening.

5. Safety Injection System (High Head)

   a. Those portions of the Safety Injection System in service postaccident shall be hydrostatically tested by closure of the motor-operated valves nearest the Reactor Coolant System and operation of the pumps on the minimum flow test line to the Refueling Water Storage Tank. This test shall be performed during each major refueling outage.

   b. Leakage shall be determined by visual observation. Visible leakage that cannot be stopped at test conditions shall be suitably measured to demonstrate compliance with TS 4.4.b.8.d.

   c. Any repairs necessary to meet the specified leak rate shall be accomplished within 7 days of resumption of power operation.

6. Internal Containment Spray System

   a. Those portions of the Internal Containment Spray System in service postaccident shall be hydrostatically tested by closure of the manual isolation valves nearest the spray ring assembly and operation of the pumps on the 2 inch test line to the Refueling Water Storage Tank. This test shall be performed during each major refueling outage.

   b. Leakage shall be determined by visual observation. Visible leakage that cannot be stopped at test conditions shall be suitably measured to demonstrate compliance with TS 4.4.b.8.d.

   c. Any repairs necessary to meet the specified leak rate shall be accomplished within 7 days of resumption of power operation.

7. Residual Heat Removal System

   a. Those portions of the Residual Heat Removal System external to the isolation valves at the Reactor Coolant System shall be hydrostatically tested in excess of 350 psig at each major refueling outage, or they shall be tested during their use in normal operation at least once between successive major refueling outages.

   b. Leakage shall be determined by visual observation. Visible leakage that cannot be stopped at test conditions shall be suitably measured to demonstrate compliance with TS 4.4.b.8.d.

   c. Any repairs necessary to meet the specified leak rate shall be accomplished within 7 days of resumption of power operation.

8. Acceptance Criteria

a. If the combined leak rate from all Type B & C tests, as determined by the sum of the most recent results for each penetration test, exceeds 0.60 L_a, repairs and retest shall be performed to demonstrate reduction of the combined leak rate to this value.

b. The tests described in this section, TS 4.4.b, shall include the penetrations which extend from the containment vessel to the special ventilation zone of the Auxiliary Building. If the combined leak rate from tests of these penetrations, as determined by the sum of the most recent results for each penetration, exceeds 0.10 L_a, repairs and retest shall be performed to demonstrate reduction of the combined leak rate to this value.

c. The tests described in this section, TS 4.4.b, shall include the penetrations which extend from the containment vessel beyond the boundary of the special ventilation zone of the Auxiliary Building. If the combined leak rate from tests of these penetrations, as determined by the sum of the most recent results for each penetration, exceeds 0.01 L_a, repairs and retest shall be performed to demonstrate reduction of the combined leak rate to this value.

d. The combined leakage from all trains of the RHR, Safety Injection, and Internal Containment Spray Systems shall be < 6 gallons per hour.

c. Shield Building Ventilation System

1. At least once per operating cycle or once every 18 months, whichever occurs first, the following conditions shall be demonstrated:

a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is < 10 inches of water and the pressure drop across any HEPA filter bank is < 4 inches of water at the system design flow rate (±10%).

b. Automatic initiation of each train of the system.

c. Operability of heaters at rating and the absence of defects by visual observation.

2. Shield Building Ventilation System Filter Testing

   a. The in-place DOP test for HEPA filters shall be performed (1) at least once per 18 months and (2) after each complete or partial replacement of a HEPA filter bank or after any maintenance on the system that could affect the HEPA bank bypass leakage.

   b. The laboratory tests for activated carbon in the charcoal filters shall be performed (1) at least once per 18 months for filters in a standby status or after 720 hours of filter operation, and (2) following painting, fire, or chemical release in any ventilation zone communicating with the system.

   c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any maintenance on the system that could affect the charcoal adsorber bank bypass leakage.

   d. Each train shall be operated with the heaters on at least 10 hours every month.

3. An air distribution test on these HEPA filter banks will be performed after any maintenance or testing that could affect the air distribution within the systems. The test shall be performed at design flow rate (±10%). The results of the test shall show the air distribution is uniform within ±20%[1].

4. Each train shall be determined to be operable at the time of its periodic test if it produces measurable indicated vacuum in the annulus within 2 minutes after initiation of a simulated safety injection signal and obtains equilibrium discharge conditions that demonstrate the Shield Building leakage is within acceptable limits.

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[1] In WPS letter of August 25, 1976 to Mr. Al Schwencer (NRC) from Mr. E. W. James, we relayed test results for flow distribution for tests performed in accordance with ANSI N510-1975. This standard refers to flow distribution tests performed upstream of filter assemblies. Since the test results upstream of filters were inconclusive due to high degree of turbulence, tests for flow distribution were performed downstream of filter assemblies with acceptable results (within 20%). The safety evaluation attached to Amendment 12 references our letter of August 25, 1976 and acknowledges acceptance of the test results.

d. Auxiliary Building Special Ventilation System

1. Periodic tests of the Auxiliary Building Special Ventilation System, including the door interlocks, shall be performed in accordance with TS 4.4.c.1 through TS 4.4.c.3, except for TS 4.4.c.2.d.

2. Each train of Auxiliary Building Special Ventilation System shall be operated with the heaters on at least 15 minutes every month.

3. Each system shall be determined to be operable at the time of periodic test if it starts with coincident isolation of the normal ventilation ducts and produces a measurable vacuum throughout the special ventilation zone with respect to the outside atmosphere.

e. Containment Vacuum Breaker System

The power-operated valve in each vent line shall be tested during each refueling outage to demonstrate that a simulated containment vacuum of 0.5 psig will open the valve and a simulated accident signal will close the valve. The check and butterfly valves will be leak tested in accordance with TS 4.4.b during each refueling, except that the pressure will be applied in a direction opposite to that which would occur post-LOCA.

BASIS

Background

Containment leak testing and leak testing extensions of the containment atmosphere must be done to verify that operation is bounded by the safety analysis.[1] The testing process will include: (1) an overall containment leak rate evaluation (Type A); (2) a determination of the leakage through pressure containing or leakage limiting boundaries (Type B); and (3) an evaluation of the leak rate through containment isolation valves (Type C).[2] These tests are intended to check all possible paths for containment atmosphere to reach the outside atmosphere. If measured leak rates are at an unacceptable level, the above mentioned tests will provide a means for locating paths of excessive leakage.

Minimum Test Temperature (TS 4.4.a.1)

During containment pressurization the containment atmosphere temperature shall not reach a level that challenges the ductility of any steel component located within the shield building. A minimum test temperature of 50°F (containment atmosphere) provides for steel component safety.[3]

Definition of P_t and P_a (TS 4.4.a.2)

If the design basis accident[1] occurred during normal steady-state power operation, the maximum pressure during the transient would not exceed 46 psig. The primary containment shell has been successfully strength tested at 51.8 psig. A conservative value of 46 psig was chosen as the pressure at which overall integrated leak tests will be conducted. Tests conducted at 46 psig or 23 psig will demonstrate the ability of the containment vessel to act as a barrier between containment atmosphere and outside atmosphere as would be needed in a postaccident situation.

Duration (TS 4.4.a.3)

The duration of the test period must be sufficient to enable adequate data to be accumulated so that a leakage rate and upper confidence limit can be accurately determined.

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[1] USAR Section 14.3

[2] 10 CFR Part 50, Appendix J

[3] USAR Section 5.2

Fluid Systems Vented (TS 4.4.a.4)

Venting of fluid systems, which during postaccident conditions becomes an extension of the containment atmosphere, is necessary to insure that possible leak paths of containment air in a postaccident situation will be verified as being leak tight or as needing repair. Those extensions of the containment atmosphere that are not vented prior to an ILRT include the following: RHR, SIS, ICS, CC, and SW. ILRT's shall be conducted in a manner as would occur had a containment isolation signal been initiated.

Isolating Leaks During the Test (TS 4.4.a.5)

Isolating excessive leak paths during a Type A test for later repair and completing the test ensures that the containment will be pressurized only once in conducting a Type A test. Type B or C leak testing paths that were isolated during a Type A test provides the "as found" leakage. Repairing and retesting the once isolated leak paths provides the "as left" leakage. Adding the pre-repair leakage to the ILRT results yields the "as found" total integrated leak rate while adding the post-repair leakage provides the "as left" total integrated leak rate.

Type A Test Acceptance Criterion (TS 4.4.a.6)

It has been recognized that the quality of the containment vessel and penetration seals used in the construction of the containment can permit meeting a 0.5 wt% per day leakage rate, (L_a). Assumptions for containment vessel leakage rate are provided in the USAR.[4] The acceptance criteria from Appendix J to 10 CFR Part 50, 0.75 L_a or 0.375 wt%, is conservative. The assumptions used in the USAR conform to NRC Safety Guide 4 and result in off-site doses within the criteria set forth in 10 CFR Part 100 following the design basis accident.

Type A Test Frequency (TS 4.4.a.7 and TS 4.4.a.8)

Integrated leak rate tests are done periodically to detect any deteriorating conditions that may adversely affect the ability of the primary reactor containment building to perform its intended function. The Commission has determined that three tests at approximately equal intervals within 10 years is a suitable frequency. 10 CFR Part 50, Appendix J, explains Type A test schedule modifications applicable if an Integrated Leak Rate Test does not meet the acceptance criteria.

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[4] USAR Section 14.3

Local Leak Rate Tests (TS 4.4.b)

The Commission has determined that local leak rate tests will be performed at P_a, which at KNPP is 46 psig. Conducting Type B & C tests at P_a will determine whether these barriers to containment atmosphere will perform during the design basis accident. Periodically conducting Type C tests determines the degradation rate on the sealing capability of the isolation valves. Present experience indicates that 2 years is the maximum time interval that should be allowed before retesting the sealing capability of individual valves.[6] The above reasoning also applies to Type B tests (pressure containing and leak limiting boundaries). Various methods have been developed for measuring local leak rates, all of which are equivalent.

Performing Type B & C Tests Prior to Type A Test (TS 4.4.b.3)

Type B and C tests are conducted independently of Type A tests. Type B & C tests are conducted during each refueling outage whereas Type A tests are performed three times within a 10-year period. When a Type A test and Type B & C tests are to be performed during the same outage, it is preferable to conduct the Type B & C test prior to the Type A test. Including the Type B and C (pre-post) repair differential leakage in the Type A test results provides an indication of the "as-found" containment integrated leakage rate.

Personnel Air Locks (TS 4.4.b.4)

Personnel air locks are a leak limiting boundary of the primary containment system and accordingly shall be Type B tested. The frequency of testing air locks is greater than that for other Type B tests due to the nature of the penetration. Every 6 months the entire air lock shall be pressurized to P_a in order to determine its leak tightness. Air locks opened when containment integrity is not required shall be leak tested by pressurizing the entire air lock before placing the plant in a condition requiring containment integrity. Air locks opened when containment integrity is required shall be leak tested within 3 days of that opening. Air locks opened frequently (more than once every 3 days) when containment integrity is required shall be leak tested once every 3 days. Testing the air lock door seals fulfills the 3-day testing requirements.

[6] Letter from Darrell G. Eisenhut to Carl W. Giesler dated September 30, 1982.

Hydrostatic Testing of SI, ICS and RHR (TS 4.4.b.5, 4.4.b.6 and 4.4.b.7

The safeguard systems which operate postaccident to cool the containment and maintain the reactor core in a safe condition become part of the containment system during the postaccident period. These safeguard systems are designed to remain intact during and postaccident at which time they will be flooded and in operation. These safeguard systems are designed for pressures well in excess of the peak containment pressure. The protection of the health and safety of the public is assured by limiting the leakage from these systems rather than limiting the leakage through their isolation valves since these isolation valves will not be shut postaccident. The refueling interval inspection specified for the piping of these systems will ensure the leak tightness of these systems at pressures comparable to those pressures which would exist postaccident. TS 4.4.b.5, TS 4.4.b.6, and TS 4.4.b.7 incorporate the exemptions to 10 CFR Part 50, Appendix J, requirements as allowed by 10 CFR 50.12 and granted by the Commission for the Kewaunee Nuclear Power Plant.(7)

Acceptance Criteria for Type B & C Tests (TS 4.4.b.8)

Appendix J to 10 CFR Part 50 defines the acceptable leak rate through Type B and C penetrations.

There are penetrations which extend the containment atmosphere past the boundary of the special ventilation zone of the Auxiliary Building. Containment atmosphere escaping through these paths will not be filtered through charcoal and HEPA filters. Due to the special nature of these penetrations, the allowable leak rate is less than those penetrations which would leak to the special ventilation zone.

The Safety Injection System, Internal Containment Spray System, and Residual Heat Removal (RHR) System are subject to containment sump water during their postaccident use. A radiological analysis was performed using the RHR System to demonstrate that the liquid leakage limit would not result in doses greater than the 10 CFR Part 100 guidelines.(8) The conclusion of that analysis was that a 6 gph leak rate of containment sump water to the Auxiliary Building special ventilation zone would result in off-site doses below the 10 CFR Part 100 guidelines.

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(7)Letter from Darrell G. Eisenhut to Carl W. Giesler dated September 30, 1982

(8)USAR Section 14.3

Shield Building Ventilation System (TS 4.4.c)

Pressure drop across the combined HEPA filters and charcoal adsorbers of < 10 inches of water and an individual HEPA bank pressure drop of < 4 inches of water at the system design flow rate (±10%) will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. A test frequency of once per operating cycle establishes system performance capability. This pressure drop is approximately 6 inches of water when the filters are clean.

Shield Building Ventilation System Filter Testing (TS 4.4.c.2)

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. Replacement adsorbent should be qualified according to the guidelines of Regulatory Guide 1.52 (Rev. 1) dated June 1976. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly, and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. The use of multi-sample assemblies for test samples is an acceptable alternate to mixing one bed for a sample. If the iodine removal efficiency test results are unacceptable, all adsorbent in the system should be replaced. Any HEPA filters found defective should be replaced with filters qualified pursuant to Regulatory Position C.3.d of Regulatory Guide 1.52 (Rev. 1) dated June 1976.

If painting, fire, or chemical release occurs, the charcoal adsorber will be laboratory tested to determine whether it was contaminated from the fumes, chemicals, or foreign materials. Replacement of the charcoal adsorber can then be evaluated.

SBV Test Frequency (TS 4.4.c.3 & TS 4.4.c.4)

Operation of the systems every month will demonstrate operability of the filters and adsorber system. Operation of the Shield Building Ventilation System will result in a discharge to the environment. This discharge is made after at least three samples of the building atmosphere have been analyzed to determine the concentration of activity in the atmosphere.

Auxiliary Building Special Ventilation System (TS 4.4.d)

Demonstration of the automatic initiation capability is necessary to assure system performance capability.[9]

Periodic checking of the inlet heaters and associated controls for each train will provide assurance that the system has the capability of reducing inlet air humidity so that charcoal adsorber efficiency is enhanced.

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[9]USAR Section 9.6

In-place testing procedures will be established utilizing applicable sections of ANSI N510-1975 standard as a procedural guideline.

Vacuum Breaker Valves (TS 4.4.e)

The vacuum breaker valves are 18 inch butterfly valves with air to open, spring to close operators. The valve discs are center pivot and rotate when closing to an EPT base material seat. When closed, the disc is positioned fully on the seat regardless of flow or pressure direction. Testing these valves in a direction opposite to that which would occur post-LOCA verifies leakage rates of both the vacuum breaker valves and the check valves downstream.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATING TO AMENDMENT NO.106 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 letter dated November 16, 1993, as supplemented December 7, 1993, the Wisconsin Public Service Corporation (WPSC), the licensee, submitted a request for revision to the Kewaunee Nuclear Power Plant (KNPP) Technical Specifications. The proposed amendment would modify KNPP TS 4.4.a.7 by deleting the requirement that couples the performance of the Type A leakage tests to the 10-year inservice inspection program requirements. This change is being proposed to reflect the partial exemption from the requirements of 10 CFR 50, Appendix J, Section III.D.a.(a), which was granted by the NRC on February 14, 1994. In addition, administrative changes to KNPP TS Section 4.4 and its associated bases are being proposed.

2.0 EVALUATION

In addition to the proposed TS changes described above, the licensee's November 16, 1993, letter requested a partial exemption from the Commission's regulations. The request was for a partial exemption from the requirements of 10 CFR Part 50, Appendix J, Section III.D.1.(a). This Section requires, in part, that "...a set of three Type A tests shall be performed at approximately equal intervals during each 10-year service period. The third test of each set shall be conducted when the plant is shutdown for the 10-year plant inservice inspection." The licensee's proposal was to perform the three Type A tests at approximately equal intervals within each 10-year period, with the third test of each set conducted as close as practical to the end of the 10-year period. However, there would be no required connection between the Appendix J 10-year interval and the inservice inspection (ISI) 10-year interval. Kewaunee's 10-year Appendix J interval ends in 1994 and the third Type A test is scheduled for the 1994 refueling outage.

The 10-year plant ISI is the series of inspections performed every 10 years in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50.55a. The licensee performs the ISI volumetric, surface and visual examinations of components and system pressure tests in accordance with 10 CFR 50.55a(g)(4) throughout the 10-year inspection interval. The major portion of this effort is presently being performed every 12 months during the refueling outages. Kewaunee's second 10-year ISI interval ends in June 1994. Kewaunee is scheduled to complete the second 10-year ISI program during the spring of 1995 as allowed by Section XI IWA 2400(c). The reactor vessel inspection during the 1995 refueling outage will complete the second 10-year ISI program. Kewaunee is also scheduled to begin the third 10-year program during the 1995 refueling outage. As a result, the completion of the second 10-year ISI program will occur in 1995 and the 10-year Appendix J interval will end in the spring of 1994.

Since elements of the ISI program are conducted throughout each 10-year cycle rather than during a refueling outage at the end of the cycle, the subject coupling requirement offers no benefit either to safety or to the economical operation of the facility. Moreover, each of these two surveillance tests (i.e., the Type A tests and the 10-year ISI program) is independent of the other and provides assurances of different plant characteristics. The Type A test assures the required leak-tightness to demonstrate compliance with the guidelines of 10 CFR Part 100. The 10-year ISI program provides assurance of the integrity of the structures, systems, and components in compliance with 10 CFR 50.55a. There is no safety-related concern necessitating their coupling in the same refueling outage.

Based on the above, the staff found that the subject exemption request met the underlying purpose of the rule and that the uncoupling of the Type A tests from the 10-year ISI program would not present an undue risk to the public health and safety. Accordingly, the NRC approved the issuance of the subject exemption on February 14, 1994.

KNPP TS 4.4.a.7 currently reads as follows:

> "The frequency of periodic integrated leak rate tests subsequent to preoperational tests shall be three tests to be performed at approximately equal intervals during each 10-year service period. The third test of each set shall coincide with a major refueling outage that occurs within 6 months of the end of the 10-year period."

In order to be consistent with the partial exemption to the requirements of 10 CFR 50, Appendix J, Section III.D.1.(a) discussed previously, the licensee's proposal removes the requirement which couples the performance of the Type A leakage test to the 10-year ISI program requirements. The licensee's proposal changes TS 4.4.a.7 to read:

> "The frequency of periodic integrated leak rate tests subsequent to preoperational tests shall be three tests to be performed at approximately equal intervals during each 10-year period."

As noted previously, there is no benefit in coupling the requirements of the 10-year ISI program with those for performing Type A leakage rate tests. Since each of these surveillance tests is independent of the other and provide assurance of different plant characteristics, there is no safety-related concern necessitating their coupling in the same refueling outage.

Based on the above, and because the proposed TS change is consistent with an NRC approved exemption, the staff finds this change acceptable.

The licensee's proposal also included a number of formatting changes and corrections of minor typographical errors. Among the formatting changes is a proposal to renumber the pages of the basis section. These changes are being proposed in conjunction with converting the TS document over to the WordPerfect software now being used by the licensee.

The staff has reviewed the changes discussed above and, since they are administrative in nature, and do not alter the intent or interpretation of the TS, the staff finds them acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Wisconsin State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment changes 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 or changes a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent 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 (58 FR 67865). 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.

5.0 CONCLUSION

The Commission 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: R. Laufer

Date: February 17, 1994