ATTACHMENT 1

TO LETTER

FROM C. W. GIESLER TO S. A. VARGA

PROPOSED AMENDMENT NO. 52 TO THE KNPP

TECHNICAL SPECIFICATIONS, SECTION 4.4

CONTAINMENT TESTS

4.4 Containment Tests

Applicability

Applies to integrity testing of the steel containment, sheild 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 10CFR50, 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 4.4.a.7 at reduced pressure (P_t) of 23 psig or at a peak pressure (P_a) of 46 psig.

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3. After test condition stabilization, the test duration shall be a minimum of eight hours and shall have a total of not less than 20 sets of data points at approximately equal time intervals.

4. All fluid systems which, under post accident conditions, become an extension of the containment presssure 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 post-accident 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}) shall be less than 0.75 L_a. 52

   d. At a reduced test pressure of (P_t) 23 psig, the measured leak rate (L_{tm}) shall be less that 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 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.

8. If the leak rate determined by any test exceeds the maximum allowable leak rate, 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 maximum allowable leak rate, 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 maximum allowable.

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

1. Type B & C tests as defined in 10CFR50 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 one month of, each major refueling outage, but are not to exceed two years between tests.

3. Local leak rate tests may be performed prior to the integrated leak rate test. 52

4. Personnel Air Lock Testing

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

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

c. Air locks opened during periods when containment integrity is required shall be tested within 3 days of being opened. Air locks opened more frequently than once every 3 days shall be tested at least once every 3 days during the period of frequent openings.

Testing the air lock door double seals fulfills the 3 day test requirement. Air lock door seal testing shall not be substituted for the six-month test.

d. The overall air lock leakage rate shall be in accordance with specification 4.4.b.8.

5. Safety Injection System (High Head)

a. Those portions of the Safety Injection System in service post-accident 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 Specification 4.4.b.8.d. 52

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

6. Internal Containment Spray System

a. Those portions of the Internal Containment Spray System in service post-accident shall be hydrostatically tested by closure of the manual isolation valves nearest the spray ring assembly and operation of the pumps on the 2" 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 Specification 4.4.b.8.d.

c. Any repairs necessary to meet the specified leak rate shall be accomplished within seven 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 Specification 4.4.b.8.d. 52

c. Any repairs necessary to meet the specified leak rate shall be accomplished within seven 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, 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, 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 less than six (6) gallons per hour. 52

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 absorber banks is less than 10 inches of water and the pressure drop across any HEPA filter bank is less than 4 inches of water at the system design flow rate (±10%). 52

b. Automatic initiation of each train of the system

c. Operability of heaters at rating and the absence of defects by visual observation. 52

2. a. The in-place DOP test for HEPA filters shall be performed (1) at least once per 18 months and (2) following painting, fire or chemical release in any ventilation zone communicating with the system.

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 following painting, fire or chemical release in any ventilation zone communicating with the system.

c. Cold DOP testing shall be performed 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.

d. 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 absorber bank bypass leakage.

e. 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%.*

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 two minutes after initiation of a simulated safety injection

* See Note TS 4.12.b.4

signal and obtains equilibrium discharge conditions that demonstrate the Shield Building leakage is within acceptable limits.

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 Specifications 4.4.c.1 through 4.4.c.3 except for Specification 4.4.c.2.e.
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 specification 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.(2) 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).[3] 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[1].

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

If the Design Basis Accident[2] 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 post accident situation. 52

Stabilization & Duration (TS 4.4.a.3)

Conditions shall stabilize prior to an ILRT such that an accurate inventory of containment atmosphere is maintained throughout the test. Conditions will be stabilized when temperature variations over time are negligible. The containment vessel and atmosphere together form a thermodynamic system to which there are two degrees of freedom. The assumption of constant containment volume

leaves one degree of freedom. Choosing temperature or pressure as the second degree of freedom fixes either the pressure or temperature, respectively. Once the containment has been pressurized the only changes in pressure will be caused by variations in temperature or leakage. Therefore, the condition of pressure stabilization shall be considered achieved upon temperature stabilization.

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. The test duration and number of data points required are in accordance with ANSI/ANS 56.8-1981. Containment System Leakage Testing Requirements.

Fluid Systems Vented (TS 4.4.a.4)

Venting of fluid systems which during post-accident conditions become an extension of the containment atmosphere is necessary to insure that possible leak paths of containment air in a post-accident 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. 52

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). This is conservative as the FSAR section 14.3-5, Offsite Dose Consequences, assumes a Containment Vessel leakage rate of 2.5 wt% per day for the first day and 1.25 wt% per day for the remaining 29 days.(2) The acceptance criteria from Appendix J to 10CFR50, 0.75 L_a or 0.375 wt%, is still more conservative. The assumptions used in the FSAR conform to NRC Safety Guide 4 and result in offsite doses within the criteria set forth in 10CFR100 following the Design Basis Accident.

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

Integrated leak rate tests are done periodically to detect any deteriorating conditions that may adversely affect the ability of the primary reactor containment to perform its intended function. The Commission has determined that three tests at approximately equal intervals within ten years is a suitable frequency. 10CFR50, Appendix J explains Type A test schedule modifications applicable if an Integrated Leak Rate Test does not meet the acceptance criteria.

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 two years is the maximum time interval that should be allowed before retesting the sealing capability of individual valves.(5) 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. 52

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. Local leak rate tests are conducted during each refueling outage whereas ILRT's are performed three times within a ten-year period. When an ILRT and a Type B & C test are to be performed during the same outage, it is preferable to conduct the Type B & C test prior to the ILRT.

Personneal 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 greated than that for other Type B tests due to the nature of the penetration. Every six 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 three days of that opening. Air locks opened frequently (more than once every three days) when containment integrity is required shall be leak tested once every three days. Testing the air lock door seals fulfills the three day testing requirement. 52

Hydrostatic Testing of SI, ICS and RHR (TS 4.4.b.4, 4.4.b.6 and 4.4.b.7)

The Safeguard Systems which operate post accident to cool the containment and maintain the reactor core in a safe condition become part of the containment system during the post-accident period. These safeguard systems are designed to remain intact during and post-accident 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 post-accident. 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 post-accident. Technical Specifications 4.4.6.5, 4.4.6.6, 4.4.6.7 incorporate the exemptions to 10CFR50 Appendix J requirements as allowed by 10CFR50.12 and granted by the Commission for the Kewaunee Nuclear Power Plant.(5)

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

Appendix J to 10CFR50 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 allowble 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 post-accident 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 10CFR Part 100 guidelines.(2) As a result of that analysis the allowable leakage for the RHR system was determined to be two gallons per hour per train. The SIS and ICS systems are subject to containment sump water and each system is allowed a one gallon per hour leak rate. The total leakage of containment sump water would then be six (6) gallons per hour to the auxiliary building special ventilation zone, (ABSVZ). The resultant offsite dose from a leak of 6 gph of containment sump water to the ABSVZ will not exceed 10CFR100 guidelines. 52

Shield Building Ventilation System (TS 4.4.c)

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 10 inches of water and an individual HEPA bank pressure drop of less than 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. 52

If painting, fire or chemical release occurs such that the HEPA filter or charcoal adsorber should become contaminated from the fumes, chemicals, or foreign materials, the same tests and sample analysis should be performed as required for operational use.

SBV Test Frequency (TS 4.4.c.3 & 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 3 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.b.d)

Demonstration of the automatic initiation capability is necessary to assure system performance capability.(4)

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.

In-place testing procedures will be established utilizing applicable sections of ANSI N510 - 1975 standard as a procedural guideline. 52

Vacuum Breaker Valves (TS 4.4.e)

The vacuum breaker valves are 18" butterfly valves with air to close, spring to open 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.

References:

(1) Updated FSAR Section 5.2
(2) Updated FSAR Section 14.3
(3) 10CFR Part 50, Appendix J
(4) Updated FSAR Section 9.6
(5) Letter from Darrell G. Eisenhut to Carl W. Giesler dated September 30, 1982

4. 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. | 33

c. Perform an air distribution test on the HEPA filter bank after any maintenance or testing that could affect the air distribution within the system. The test shall be performed at design flow rate (±10%). The results of the test shall show the air distribution is uniform within ±20%.* | 33

* This note applies here and also to 4.4.c.3. | 52

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.

ATTACHMENT 2

TO LETTER

FROM C. W. GIESLER TO S. A. VARGA

FSAR TABLE 5.2-2 & INFORMATION TO

BE INCLUDED UPON FSAR UPDATE

Mr. S. A. Varga
Attachment 2
November 10, 1982

The information from Proposed Amendment 23c Table TS 4.4-1 will be included in Table 5.2-2 of the FSAR. Proposed Amendment No. 23, issued on September 5, 1975, and revised on January 4, 1977, and August 17, 1981, was withdrawn on August 23, 1982; however, the information from Proposed Table TS 4.4-1 will not be lost as it will be included with the annual FSAR update.

Proposed Amendment 23c, August 17, 1981
Withdrawn on August 23, 1982
Proposed Table TS 4.4-1

Penetration Designation and Test Method for Leakage Tests

Penetration No.	Penetration	Penetration Category	Type of Test Required	Test Method
1	Pressurizer Relief Tank Sample to Gas Analyzer	P-ABSVZ	C	Pneumatic
2	Pressurizer Relief Tank Nitrogen Supply	Exterior	C	Pneumatic
3	Instrumentation	Exterior	B	Pneumatic
	Sensors	Exterior	B	Pneumatic
	Isolation Valves	Exterior	C	Pneumatic
4	Primary System Vent Heater	P-ABSVZ	C	Pneumatic
5	Reactor Coolant Drain Tank Pump Discharge	P-ABSVZ	C	Pneumatic
6E & 6W	Main Steam Expansion Bellows	Annulus	B	Pneumatic
7E & 7W	Feedwater Expansion Bellows	Annulus	B	Pneumatic
8S & 8N	Steam Generator Blowdown Expansion Bellows	Annulus	B	Pneumatic
9	RHR Loop Outlet Expansion Bellows	Annulus	B	Pneumatic
10	RHR Loop Inlet Expansion Bellows	Annulus	B	Pneumatic
11	Letdown Line Isolation	P-ABSVZ	C	Pneumatic
	Valve Expansion Bellows	Annulus	B	Pneumatic
12	Charging Line	SGOPA	C	Pneumatic

Penetration No.	Penetration	Penetration Category	Type of Test Required	Test Method
13N & 13E	RC Pump Seal Water Supply	P-ABSVB	C	Pneumatic
14	RC Pump Seal Water Return	P-ABSVB	C	Pneumatic
15-SS	Pressurizer Steam Sample	P-ABSVB	C	Pneumatic
15-LS	Pressurizer Liquid Sample	P-ABSVB	C	Pneumatic
15-HLS	Loop B Hot Leg Sample	P-ABSVB	C	Pneumatic
18	Fuel Transfer Tube Expansion Bellows	Annulus	B	Pneumatic
	"O" Ring Seal	Exterior	B	Pneumatic
19	Service Air	Exterior	C	Pneumatic
20	Instrument Air	Exterior	C	Pneumatic
21	Reactor Coolant Drain Tank Gas Analyzer	P-ABSVB	C	Pneumatic
22	Containment Air Sample In	P-ABSVB	C	Pneumatic
23	Contaiment Air Sample Out	P-ABSVB	C	Pneumatic
24	Service Water Non Safeguard	Exterior	C	Pneumatic
25N	Containment Purge Exhaust Duct	P-ABSVB	C	Pneumatic
25S	Containment Vent and Purge Supply Duct	P-ABSVB	C	Pneumatic
26	Containment Sump "A" Discharge	P-ABSVB	C	Pneumatic
27N-XI	Instrumentation			
	Transmitter	P-ABSVB	B	Pneumatic
	Isolation Valves	P-ABSVB	C	Pneumatic

Proposed Amendment 23c, August 17, 1981
Withdrawn on August 23, 1982
Proposed Table TS 4.4-1

Penetration No.	Penetration	Penetration Category	Type of Test Required	Test Method
27N-X2 27N-SW 27NE-XI 27NE-X2 27NE-X3	Instrumentation Transmitters Isolation Valves	Exterior Exterior	B C	Pneumatic Pneumatic
27EN	Test Line Plug	P-ABSVZ	B	Pneumatic
27EN-X	Instrumentation Transmitter Isolation Valves	 Exterior Exterior	 B C	 Pneumatic Pneumatic
31	Nitrogen to Accumulator	Exterior	C	Pneumatic
36N-X2	Instrumentation Transmitter Isolation Valves	 Exterior Exterior	 B C	 Pneumatic Pneumatic
36S 36N 36SE 36NW	Hydrogen Control System	P-ABSVZ	C	Pneumatic
41E	Containment Vacuum Breaker Valve "O" Ring Seal	 Annulus Annulus	 C B	 Pneumatic (4) Pneumatic (4)
41S/S	Containment Vacuum Breaker Valve "O" Ring Seal	 Annulus Annulus	 C B	 Pneumatic (4) Pneumatic (4)
42N	Containment Vessel Test Pressurization Flange	Annulus	B	Pneumatic
45	Reactor Makeup Water to PRT	P-ABSVZ	C	Pneumatic

Proposed Amendment 23c, August 17, 1981
Withdrawn on August 23, 1982
Proposed Table TS 4.4-1

Penetration No.	Penetration	Penetration Category	Type of Test Required	Test Method
A	Electrical Penetration Manifold "A"	Annulus	B	Pneumatic
B	Electrical Penetration Manifold "B"	Annulus	B	Pneumatic
C	Electrical Penetration Manifold "C"	Annulus	B	Pneumatic
D	Electrical Penetration Manifold "D"	Annulus	B	Pneumatic
E	Electrical Penetration Manifold "E"	Annulus	B	Pneumatic
F	Electrical Penetration Manifold "F"	Annulus	B	Pneumatic
--	Equipment Door	Annulus	B	Pneumatic
--	Personnel Airlock	Annulus	B	Pneumatic
--	Personnel Airlock Inner Door	Annulus	B	Pneumatic
--	Personnel Airlock Outer Door	Annulus	B	Pneumtaic
--	Emergency Airlock	Annulus	B	Pneumatic
--	Emergency Personnel Airlock Inner Door	Annulus	B	Pneumatic
--	Emergency Personnel Airlock Outer Door	Annulus	B	Pneumatic
AL1	Personnel Airlock Electrical Penetration	Annulus	B	Pneumatic
AL2	Personnel Airlock Electrical Penetration	Annulus	B	Pneumatic
	Personnel Airlock Emergency Air Opening Seal	Annulus	B	Pneumatic

Note 2

Penetration Category

P-ABSVZ - Piping penetration to systems located within the auxiliary building special ventilation zone.
E-ABSVZ - Electrical penetration to within the auxiliary building special ventilation zone.
Exterior - Penetrations which are exterior to the shield building or th auxiliary building special ventilation zone.
Annulus - Penetration to within the shield building annulus.
SGOPA - Safeguard system operating post LOCA and is designed for pressures in excess of peak containment pressure for DBA.

Note 3
Blind Flange Penetration

Note 4
Test pressure is applied in the opposite direction to the pressure which would exist when the valve is required to perform its safety function.

Note 5
Test required is specified in Specification 4.4.c for all penetrations identified by I in the Type of Test Required column.

THC49131

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS) (52)

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November 10, 1982

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Attention: Mr. S. A. Varga, Chief
Operating Reactors Branch #1

Gentlemen:

Docket 50-305
Operating License DPR-43
Proposed Technical Specification Amendment No. 52
Appendix J to 10CFR50 Containment Leakage Testing

References: 1) Letter from Darrell G. Eisenhut to Carl W. Giesler dated September 30, 1982
2) Letter from Carl W. Giesler to Mr. S. A. Varga dated August 23, 1982
3) Letter from E. R. Mathews to Mr. A. Schwencer dated May 1, 1981

Enclosed please find forty (40) copies of Proposed Amendment No. 52 to the Kewaunee Nuclear Power Plant Technical Specifications. This Proposed Amendment deals with Section 4.4, Containment Tests, as required by 10CFR50 Appendix J, Primary Reactor Containment Leakage Testing For Water-Cooled Power Reactors. This proposed amendment revises and supercedes pages TS 4.4-3, TS 4.4-8 and TS 4.4-9 previsouly submitted with Proposed Amendment No. 25C transmitted May 1, 1981 (Reference 3).

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We have received the Safety Evaluation Report (SER) prepared by the NRC staff based on the Technical Evaluation Report prepared by the Franklin Research Center as a consultant to NRR.

The SER addresses requests for exemptions to certain requirements of Appendix J in response to Proposed Amendment No. 23 dated September 5, 1975, as supplemented on January 4, 1977 and August 17, 1981. Wisconsin Public Service Corporation requested the Commission to disregard Proposed Amendment No. 23 (Reference 2) and committed to submitting a new amendment request concerning Appendix J by November 1, 1982.

Following is a discussion of how WPSC intends to incorporate the conclusions of the Safety Evaluation Report into the Technical Specifications while maintaining consistency with 10CFR50, Appendix J. The discussion is organized such that each conclusion from the SER is followed by WPSC's intended compliance.

SER Conclusion 1: The proposal to continue hydraulic testing in lieu of pneumatic testing of certain isolation valves is acceptable only where the liquid leakage measurements are used to demonstrate a water seal at the valves throughout the post-accident period.

WPSC Response: Hydraulic testing will be done in lieu of pneumatic testing for isolation valves in the RHR system, safety injection system and the containment spray system as discussed under SER Conclusions 3, 4, and 5.

SER Conclusion 2: The Technical Specifications should be revised to conform to

the "no greater than two year" requirement of Appendix J with respect to Type B and Type C testing.

WPSC Response: Page TS 4.4-3, Specification 4.4.b.2 is explicit in that the period between Type B and C leak tests shall not exceed two years.

SER Conclusion 3: The combination of the design features of the RHR system and the proposed periodic hydrostatic testing is sufficient to ensure that the isolation valves of penetration Nos. 9, 10, and 48 are not relied upon to prevent the escape of containment air to the atmosphere where the hydraulic test is used to demonstrate system leak-tightness. In this case, substitution of a hydrostatic test for the required pneumatic test is an acceptable exemption from the requirements of Appendix J. In the case of penetration Nos. 30E and 30W, no exemption is required since the liquid level of Containment Sump B provides a continous water seal at these penetrations throughout the post-accident period.

WPSC Response: Hydrostatic testing of the RHR system will be performed as stated on page TS 4.4-5 Specification 4.4.b.7. We acknowledge that Appendix J does not require Type C leak testing of penetrations 30E and 30W. Therefore, they are not included in the surveillance requirements of TS Section 4.4.

SER Conclusion 4: The combination of the design features of the safety injec-

tion and RHR systems and the proposed periodic hydrostatic testing is sufficient to ensure that the isolation valves of penetration Nos. 28N, 28E, and 35 are not relied upon to prevent the escape of containment air to atmosphere where the hydrostatic test is used to demonstrate system leak-tightness. In this case, substitution of a hydrostatic test for the required pneumatic test is an acceptable exemption from the requirements of Appendix J.

WPSC Response: Hydrostatic testing of the safety injection system will be performed as stated on page TS 4.4-4, Specification 4.4.b.5.

SER Conclusion 5: The combination of the design features of the containment spray system and the proposed hydrostatic testing is sufficient to ensure that the isolation valves for penetration Nos. 29N and 29E are not relied upon to prevent the escape of containment air to the atmosphere. Substitution of the hydrostatic test for the required pneumatic test is an acceptable exemption from the requirements of Appendix J.

WPSC Response: Hydrostatic testing of the containment spray system will be performed per Technical Specification 4.4.b.6, page TS 4.4-4.

SER Conclusion: The proposed operational inspection of the charging portion of the CVCS system is not an acceptable substitute for the pneumatic leakage test of the isolation valves of penetration No. 12 required by Appendix J. These valves should be Type C

tested in accordance with Appendix J. Test connections are installed for this purpose.

WPSC Response: The isolation valves associated with penetration No. 12 are penumatically Type C leak tested in accordance with Appendix J as delineated in the updated FSAR.

SER Conclusion 7: Type C testing of component cooling system isolation valves (penetration Nos. 32N, 32E, 33N, 33E, 39, and 40) is not required. No exemption is necessary because Appendix J does not require them to be tested.

WPSC Response: The isolation valves for the component cooling system are presently hydrostatically Type C leak tested. We acknowledge that Appendix J does not require Type C leak testing of the component cooling isolation valves. Therefore, they are not included in the surveillance requirements of TS Section 4.4

SER Conclusion 8: Type C testing of service water isolation valves to the fan coil units (penetration Nos. 37NW, 37NE, 37ES, 37EN, 38NW, 38NE, 38ES, and 38EN) is not required. No exemption is necessary because Appendix J does not require them to be tested.

WPSC Response: The isolation valves for the service water system are presently hydrostatically Type C leak tested. We acknowledge that Appendix J does not require Type C leak testing of the

service water isolation valves. Therefore, they are not included in the surveillance requirements of TS Section 4.4.

SER Conclusion 9: Testing of vacuum breaker O-ring seals in the direction opposite that in which the safety function is performed is acceptable and no exemption is required because the test results will be equivalent to or more conservative than testing in the direction of accident pressure.

WPSC Response: The vacuum breaker O-ring seals are currently tested as described above. (KNPP Technical Specification 4.4.e, page TS 4.4-8.)

SER Conclusion 10: The proposal to perform Type C tests prior to the Type A test is an acceptable exemption provided a conservative measure of pre- and post-repair differential leakage is added to the Type A results and other similar conservative procedures are followed.

WPSC Response: No exemption is required and the pre- and post-repair differential leakage need not be added to the Type A test. Appendix J to 10CFR50 treats Type A testing and Type B & C testing as two independent events performed on independent schedules. Normally three sets of type B & C tests will be performed during the interval between Type A tests. There is no technical justification to add the leakage determined by one Type B & C test to the Type A test results, while

ignoring the other two Type B & C test results.

WPSC understands that it is common practice in the nuclear industry to report the results of Type A and Type B & C tests independently. If the NRC intends to have Type A tests performed prior to Type B & C tests when the two tests fall coincident upon an outage then the rule should state this. Type B & C tests performed on leak paths isolated during Type A tests will be included with the Type A results as if two (2) Type A tests had been conducted. That is, one of the Type A test results will include the pre-repair leakage and the other will include the post-repair leakage.

SER Conclusion 11: Section 4.4.b.1.C of Technical Specification 4.4 is not sufficient to ensure that all the requirements of the revised Section III.D.2 of Appendix J are achieved. The airlock testing program should be revised to conform to the requirements of Appendix J.

WPS Response: The personnel air lock testing program has been revised to conform to Appendix J. The new specification is on page TS 4.4-3, Specification 4.4.b.4.

SER Conclusion 12: Subject to the technical evaluations of Section 3.1 of the attached TER, revised Technical Specification Sections 4.4.a and 4.4.b and Table TS 4.4-1 are acceptable.

WPS Response: As noted in Reference 2 we have requested the Commission to disregard Proposed Amendment No. 23 upon which the Safety Evaluation Report was based. In preparing the new amendment we have chosen not to include proposed Table TS 4.4-1 which was submitted with Proposed Amendment No. 23. We will revise FSAR Table 5.2-2, Attachment 2, to include the information from proposed Table TS 4.4-1. Maintaining Table TS 4.4-1 would require a Technical Specification Amendment each time a new penetration is added. By maintaining this information in the Updated FSAR the table will be revised annually with the FSAR update and the cost of Technical Specification Amendments will be avoided.

Revisions Not Adressed in the SER

Page TS 4.4-1, Specification 4.4.a.3

The minimum ILRT duration has been changed from 24 hours to 8 hours. ANSI/ANS-568-1981, containment system leakage testing requirements, provides technical justification for this change.

Page TS 4.12-2

The note that is referenced on page TS 4.4-7 and located on page TS 4.12-2 was revised to maintain consistency.

The enclosed proposed Technical Specification Amendment No. 52 addresses the same technical issue as previously submitted Proposed Amendment No. 23 dated

September 5, 1975. Proposed Amendment No. 23 was submitted prior to the March 23, 1978 enactment of 10CFR170.22, "Schedule of Fees for Facility License Amendments," and since Proposed Amendment No. 52 addresses the same issue, it is exempt from the fee associated with the processing of Technical Specification changes.

Very truly yours,

C. W. Giesler
Vice President - Nuclear Power

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Enc.

cc: Mr. Robert Nelson, US NRC

Subscribed and Sworn to
Before Me This 10th Day
of November 1982

Notary Public, State of Wisconsin

My Commission Expires:
March 24, 1985