NMC
Committed to Nuclear Excellence

Kewaunee Nuclear Power Plant
N490, State Highway 42
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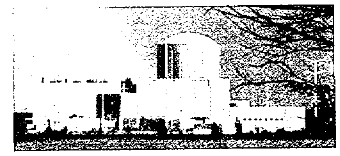
Operated by
Nuclear Management Company, LLC



March 30, 2001

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

10CFR50.90

Ladies/Gentlemen:

DOCKET 50-305
OPERATING LICENSE DPR-43
KEWAUNEE NUCLEAR POWER PLANT
PROPOSED AMENDMENT 165b TO THE KEWAUNEE NUCLEAR POWER PLANT TECHNICAL SPECIFICATIONS, CONTAINMENT ISOLATION DEVICES

References:

1) Letter from Mark L. Marchi (WPSC) to NRC Document Control Desk, dated January 13, 2000, "Proposed Amendment 165 to the Kewaunee Nuclear Power Plant Technical Specifications

2) Letter from John G. Lamb (NRC) to Mark Reddemann (NMC), dated February 1, 2001, "Kewaunee Nuclear Power Plant – Request for Additional Information Related to Proposed Amendment 165 for Technical Specifications, Containment Isolation (TAC NO. MA8017)

3) Letter from Mark E. Reddemann (NMC) to NRC Document Control Desk, dated March 7, 2001, "Proposed Amendment 165a to the Kewaunee Nuclear Power Plant Technical Specifications

In reference 1, Wisconsin Public Service Corporation (WPSC) submitted proposed amendment (PA) 165 to the Kewaunee Nuclear Power Plant (KNPP) Technical Specifications (TS). This PA was submitted to revise TS section 3.6, "Containment," to add Limiting Condition for Operation (LCO) and Allowed Outage Times (AOT) for containment isolation devices. It also provided additional information, clarification, and uniformity to the basis of the associated TS. In reference 2, the Nuclear Regulatory Commission (NRC) staff transmitted a request for additional information (RAI) concerning WPSC's PA 165. In reference 3, NMC submitted PA 165a revising PA 165 in response to the NRC staff RAI, reference 2.

Based on discussions with the NRC staff, additional modifications of the proposed amendment are necessary. This submittal also incorporates recent changes made by Kewaunee License Amendment 152. Therefore, we are resubmitting the proposed TS page changes in their entirety.

A001

These changes are:

1. TS 3.6.b.2 - Added the statement "This TS does not apply to the 36" containment purge valves when they are required to be sealed closed."
2. TS 3.6.b.3 - Added a note stating, "Separate entry is allowed into TS 3.6.b.3 for each penetration flowpath."
3. TS 3.6.b.3.A, TS 3.6.b.3.B, and TS 3.6.b.3.C - Change "and" to "with."
4. TS 3.6.b.3.D Change "controls" to "means".
5. TS 3.6.b.4 - Remove reference to TS 3.6.b.2.
6. TS 3.6.b.4.C - Change to "Achieve COLD SHUTDOWN within the subsequent 36 hours."

These changes add clarification to the license amendment request contained in reference 3. They are bounded by the existing safety analysis, significant hazards determination, and environmental consideration. Attachment 1 contains all of the strike-out Technical Specification and basis pages: TS ii, TS 1.0-2, TS 3.6-1, TS 3.6-2, TS 3.6-3, TS 3.6-4, TS B3.6-1, TS B3.6-2, TS B3.6-3, TS B3.6-4, TS B3.6-5, TS 4.4-3, TS 4.4-4, TS B4.4-1, TS B4.4-3, and TS B4.4-4. Attachment 2 contains all of the affected Technical Specification and basis pages as revised.

There is no proprietary information in this submittal. NMC requests 60 days after NRC issuance of the amendment to implement.

This submittal has been signed and notarized, in accordance with the requirements of 10 CFR 50.30(b). As required by 10 CFR 50.91(b)(1), a complete copy of this submittal has been transmitted to the State of Wisconsin.

Sincerely,

Mark E. Reddemann
Site Vice President

Subscribed and Sworn to
Before Me This 30th Day
of March, 2001

Notary Public, State of Wisconsin

My Commission Expires:
February 27, 2005

GOR

Attachments

cc -

US NRC Senior Resident Inspector
US NRC Region III
Electric Division, PSCW

ATTACHMENT 1

Letter from Mark E. Reddemann (NMC)

To

Document Control Desk (NRC)

Dated

March 30, 2001

Proposed Amendment 165b

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e. OPERABLE-OPERABILITY

A system or component is OPERABLE or has OPERABILITY when it is capable of performing its intended function within the required range. The system or component shall be considered to have this capability when: (1) it satisfies the LIMITING CONDITIONS FOR OPERATION defined in TS 3.0; and (2) it has been tested periodically in accordance with TS 4.0 and has met its performance requirements.

Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that is required for the system or component to perform its intended function is also capable of performing their related support functions.

f. OPERATING

A system or component is considered to be OPERATING when it is performing the intended function in the intended manner.

g. CONTAINMENT SYSTEM INTEGRITY

CONTAINMENT SYSTEM INTEGRITY is defined to exist when:

1. The nonautomatic Containment System isolation valves and blind flanges are closed, except as provided in TS 3.6.b~~as required~~.

2. The Reactor Containment Vessel and Shield Building equipment hatches are properly closed.

3. At least ONE door in both the personnel and the emergency airlocks is properly closed.

4. The required automatic Containment System isolation valves are OPERABLE, except as provided in TS 3.6.b~~or are deactivated in the closed position or at least one valve in each line having an inoperable valve is closed~~.

5. All requirements of TS 4.4 with regard to Containment System leakage and test frequency are satisfied.

6. The Shield Building Ventilation System and the Auxiliary Building Special Ventilation System satisfy the requirements of TS 3.6.~~b~~c.

3.6 CONTAINMENT SYSTEM

APPLICABILITY

Applies to the integrity of the Containment System.

OBJECTIVE

To define the operating status of the Containment System.

SPECIFICATION

a. CONTAINMENT SYSTEM INTEGRITY shall not be violated if there is fuel in the reactor which has been used for power operation, except whenever either of the following conditions remains satisfied:

   1. The reactor is in the COLD SHUTDOWN condition with the reactor vessel head installed, or

   2. The reactor is in the REFUELING shutdown condition.

b. Containment Isolation Valves

   1. When CONTAINMENT SYSTEM INTEGRITY is required, all containment isolation valves and blind flanges shall be OPERABLE, except as permitted by TS 3.6.b.2 and TS 3.6.b.3.

   2. Containment Penetration flow paths can be unisolated intermittently under administrative controls. This TS does not apply to the 36" containment purge valves when they are required to be sealed closed.

   3. When CONTAINMENT SYSTEM INTEGRITY is required, the following conditions of inoperability may exist during the time interval specified. Separate entry is allowed into TS 3.6.b.3 for each penetration flowpath.

      A. For one or more penetration flow paths with two containment isolation valves per penetration with one containment isolation valve inoperable:

         1. Return the valve to OPERABLE status within 24 hours or isolate the affected penetrations flow path by use of at least one:

            a) Closed and de-activated automatic valve, or

            b) Closed manual valve, or

            c) Blind flange, or

d) Check valve with flow through the valve secured

2. Verify the affected flow path is isolated:

a) For isolation devices outside containment, at least once per 31 days, or

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

B. For one or more penetration flow paths with two containment isolation valves per penetration with two containment isolation valves inoperable:

1. Return at least one isolation valve to an OPERABLE status within 1 hour or isolate the affected flow path by use of at least one:

a) Closed and de-activated automatic valve, or

b) Closed manual valve, or

c) Blind flange.

2. Verify the affected flow path is isolated:

a) For isolation devices outside containment, at least once per 31 days, or

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

C. For one or more penetration flow paths with one containment isolation valve and a closed system per penetration with one containment isolation valve inoperable:

1. Return the valve to OPERABLE status within 72 hours or isolate the affected penetrations flow path by use of at least one:

a) Closed and de-activated automatic valve, or

b) Closed manual valve, or

c) Blind flange.

2. Verify the affected flow path is isolated:

a) For isolation devices outside containment, at least once per 31 days, or

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

D. Valves and blind flanges in high radiation areas may be verified, as required by TS 3.6.b.3.A.2, TS 3.6.b.3.B.2, and TS 3.6.b.3.C.2, by use of administrative means.

4. If CONTAINMENT SYSTEM INTEGRITY is required and the OPERABILITY requirements of TS 3.6.b.3 are not met within the times specified, then initiate action to:

A. Achieve HOT STANDBY within the next 6 hours,

B. Achieve HOT SHUTDOWN within the following 6 hours, and

C. Achieve COLD SHUTDOWN within the subsequent 36 hours.

~~b~~c. All of the following conditions shall be satisfied whenever CONTAINMENT SYSTEM INTEGRITY, as defined by TS 1.0.g, is required:

1. Both trains of the Shield Building Ventilation System, including filters and heaters shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Shield Building Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

2. Both trains of the Auxiliary Building Special Ventilation System including filters and heaters shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Auxiliary Building Special Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

3. Performance Requirements

   A. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥ 99% DOP removal and ≥ 99% halogenated hydrocarbon removal.

   B. The results of laboratory carbon sample analysis from the Shield Building Ventilation System and the Auxiliary Building Special Ventilation System carbon shall show ≥ 95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C, 95% RH for the Shield Building Ventilation System and 30°C, 95% RH for the Auxiliary Building Special Ventilation System.

   C. Fans shall operate within ± 10% of design flow when tested.

~~c~~d. If the internal pressure of the reactor containment vessel exceeds 2 psi, the condition shall be corrected within 8 hours or the reactor shall be placed in a subcritical condition.

~~d~~e. The reactor shall not be taken above the COLD SHUTDOWN condition unless the containment ambient temperature is > 40°F.

BASIS

Containment System (TS 3.6)

Containment System Integrity (TS 3.6.a)

The COLD SHUTDOWN condition precludes any energy releases or buildup of containment pressure from flashing of reactor coolant in the event of a system break. The restriction to fuel that has been irradiated during power operation allows initial testing with an open containment when negligible activity exists. The shutdown margin for the COLD SHUTDOWN condition assures subcriticality with the vessel closed even if the most reactive RCC assembly were inadvertently withdrawn. Therefore, the two parts of TS 3.6.a allow CONTAINMENT SYSTEM INTEGRITY to be violated when a fission product inventory is present only under circumstances that preclude both criticality and release of stored energy.

When the reactor vessel head is removed with the CONTAINMENT SYSTEM INTEGRITY violated, the reactor must not only be in the COLD SHUTDOWN condition, but also in the REFUELING shutdown condition. A 5% shutdown margin is specified for REFUELING conditions to prevent the occurrence of criticality under any circumstances, even when fuel is being moved during REFUELING operations.

This specification also prevents positive insertion of reactivity whenever Containment System integrity is not maintained if such addition would violate the respective shutdown margins. Effectively, the boron concentration must be maintained at a predicted concentration of 2,100 ppm[1] or more if the Containment System is to be disabled with the reactor pressure vessel open.

Containment Isolation Valves (TS 3.6.b)

Containment isolation valves form a part of the containment boundary. The containment isolation valves' safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

To be considered OPERABLE, automatic containment isolation valves are required to close within prescribed time limits and to actuate on an automatic isolation signal. Check valves are considered OPERABLE when they have satisfactorily completed their required surveillance testing. Manual isolation components are considered OPERABLE when manual valves are closed, blind flanges are in place, and closed systems are intact.

Penetration flow path(s) may be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in

[1] USAR Table 3.2-1

continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. Specification TS 3.6.b.2 pertains to inoperable valves described in TS 3.6.b.3, manual valves assumed to be closed, and normally closed valves that are not assumed, by the USAR, to automatically close. This allows opening of containment isolation valves without entering the LCO or to open containment isolation valves closed as required by TS, provided the administrative controls are in place to ensure valve closure, if needed.

For these LCO(s), separate Condition entry is allowed for each penetration flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable containment isolation valve. Complying with the Required Actions may allow for continued operation, and subsequent inoperable containment isolation valves are governed by subsequent Condition entry and application of associated Required Actions.

In the event a containment isolation valve in one or more penetration flow paths is inoperable, the affected penetration flow path must be isolated within the specified time constraints. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are 1) a closed and de-activated automatic containment isolation valve, 2) a closed manual valve, 3) a blind flange, and 4) a check valve with flow through the valve secured. For a penetration flow path isolated, the device used to isolate the penetration should be the closest available one to containment. The 24-hour completion time is reasonable, considering the time required to isolate the penetration, perform maintenance, and the relative importance of supporting containment OPERABILITY.

For affected containment penetration flow paths that cannot be restored to OPERABLE status within the required completion time and that have been isolated, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure containment penetrations, requiring isolation following an accident and no longer capable of being automatically isolated, will be in that isolated position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment and capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period is specified as "prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days." This is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

With two containment isolation valves in one or more penetration flow paths inoperable, the affected penetration flow path must be isolated within 1 hour. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1-hour Completion Time is consistent with the ACTIONS of LCO 3.0.c. In the event the affected penetration is isolated, the affected penetration must be verified to be isolated on a periodic basis which remains in effect. This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of "once per 31 days for verifying each affected penetration flow path is isolated" is appropriate considering the fact that the valves are operated under administrative control and the probability of their misalignment is low.

For those penetrations where one of the isolation devices is a closed system, either inside containment or outside containment, a longer outage time is allowed. This condition is only applicable to those penetration flow paths with a single containment isolation valve and a closed system. This longer outage time is due to a closed system subjected to leakage testing, missile protected, and seismic category I piping. Also, a closed system typically has flow through it during normal operation such that any loss of integrity could be observed through leakage detection system inside containment and system walkdowns outside containment. Thus, a 72-hour completion time is considered appropriate given that certain valves may be located inside containment and the reliability of the closed system.

Isolation devices located in high radiation areas shall be verified closed by use of administrative means. Verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these devices once they have been verified to be in the proper position is small.

De-activation of an automatic containment isolation valve is accomplished by removing or interrupting the valves motive force, thus, preventing a change in the valve position by a single active failure. De-activation may be accomplished by opening the supply breaker for a motor operated valve, isolating air to an air operated valve, removing the supply fuse for a solenoid operated valve, or any other means for ensuring the isolation barrier cannot be affected by a single active failure.

Ventilation Systems (TS 3.6.c)

Proper functioning of the Shield Building Ventilation System is essential to the performance of the Containment System. Therefore, except for reasonable periods of maintenance outage for one redundant train of equipment, the complete system should be in readiness whenever CONTAINMENT SYSTEM INTEGRITY is required. Proper functioning of the Auxiliary Building Special Ventilation System is similarly necessary to preclude possible unfiltered leakage through penetrations that enter the Special Ventilation Zone (Zone SV).

Both the Shield Building Ventilation System and the Auxiliary Building Special Ventilation System are designed to automatically start following a safety injection signal. Each of the two trains of both systems has 100% capacity. If one train of either system is found to be inoperable, there is not an immediate threat to the containment system performance and reactor operation may continue while repairs are being made. If both trains of either system are inoperable, the plant will be brought to a condition where the air purification system would not be required.

High efficiency particulate air (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential radioiodine release to the atmosphere. Bypass leakage for the charcoal adsorbers and particulate removal efficiency for HEPA filters are determined by halogenated hydrocarbon and DOP respectively. The laboratory carbon sample test results indicate a radioactive methyl iodine removal efficiency under test conditions which are more severe than accident conditions.

Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers. The performance criteria for the safeguard ventilation fans are stated in Section 5.5 and 9.6 of the USAR. If the performances are as specified, the calculated doses would be less than the guidelines stated in 10 CFR Part 100 for the accidents analyzed.

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

Accident analysis assumes a charcoal adsorber efficiency of 90%.[2] To ensure the charcoal adsorbers maintain that efficiency throughout the operating cycle, a safety factor of 2 is used. Therefore, if accident analysis assumes a charcoal adsorber efficiency of 90%, this equates to a methyl iodide penetration of 10%. If a safety factor of 2 is assumed, the methyl iodide penetration is reduced to 5%. Thus, the acceptance criteria of 95% efficient will be used for the charcoal adsorbers.

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[2] USAR TABLE 14.3-8, "Major Assumptions for Design Basis LOCA Analysis"

Although committing to ASTM D3803-89, it was recognized that ASTM D3803-89 Standard references Military Standards MIL-F-51068D, Filter, Particulate High Efficiency, Fire Resistant, and MIL-F-51079A, Filter, Medium Fire Resistant, High Efficiency, these specification have been superseded. The latest versions, MIL-F-51068F and MIL-F-51079D, have been canceled and superseded by ASME AG-1, Code on Nuclear Air and Gas Treatment. This is an acceptable situation. Consequently, other referenced standards can be substituted if the new standard or methodology is shown to provide equivalent or superior performance to those referenced in ASTM D3803-89.

Containment Pressure (TS 3.6.d)

The 2 psi limit on internal pressure provides adequate margin between the maximum internal pressure of 46 psig and the peak accident pressure resulting from the postulated Design Basis Accident as discussed in Sections 14.2 and 14.3 of the USAR.[3]

The reactor containment vessel is designed for 0.8 psi internal vacuum, the occurrence of which will be prevented by redundant vacuum breaker systems.

Containment Temperature (TS 3.6.e)

The requirement of a 40°F minimum containment ambient temperature is to assure that the minimum containment vessel metal temperature is well above NDTT + 30° criterion for the shell material.

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(3) USAR Section 5

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.

f. Containment Isolation Device Position Verification

1. When the reactor is critical, verify each 36 inch containment purge and vent isolation valve is sealed closed every 31 days.

2. When the reactor is critical, verify each 2 inch containment vent isolation valve is closed every 31 days, except when the 2 inch containment vent isolation valves are open for pressure control, ALARA, or air quality considerations for personnel entry, or Surveillances that require the valves to be open.

3. Containment isolation manual valves and blind flanges shall be verified closed as specified in TS 4.4.f.3.a and TS 4.4.f.3.b, except as allowed by TS 4.4.f.3.c.

   a. When greater than COLD SHUTDOWN, verify each containment isolation manual valve and blind flange that is located outside containment and required to be closed during accident conditions is closed every 31 days, except for containment isolation valves that are locked, sealed, or otherwise secured closed or open as allowed by TS 3.6.b.2.

b. Prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN, if not performed in the previous 92 days, verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are locked sealed or otherwise secured closed or open as allowed by TS 3.6.b.2.

c. Valves and blind flanges in high radiation areas may be verified by use of administrative means.

BASIS

Background - Containment ~~System~~Tests (TS 4.4)

The Containment System is designed to provide protection for the public from the consequences of a Design Basis Accident.[1] The Design Basis Accident is an instantaneous double-ended rupture of the cold leg of the Reactor Coolant System. Pressure and temperature behavior subsequent to the accident was determined by calculations evaluating the combined influence of the energy sources, the heat sinks and engineered safety features. The assumptions and effects for containment vessel leakage rate are detailed in the USAR[2] and further amplified in one of its Appendices.[3]

The total containment system consists of two systems. The Primary Containment System consists of a steel structure and its associated engineered safety features systems. The Primary Containment System, also referred to as the Reactor Containment Vessel, is a low-leakage steel shell, including all of its penetrations, designed to confine the radioactive materials that could be released by accidental loss of integrity of the Reactor Coolant System pressure boundary. It is designed for a maximum internal/test pressure of 46 psig and a temperature of 268°F.

The Secondary Containment System consists of the Shield Building, its associated engineered safety features systems, and a Special Ventilation Zone in the Auxiliary Building. The Shield Building is a medium-leakage concrete structure surrounding the Reactor Containment Vessel and is designed to provide a means for collection and filtration of fission-product leakage from the Reactor Containment Vessel following the Design Basis Accident. A 5-ft. annular space is provided between the Reactor Containment Vessel and the Shield Building. The Shield Building Ventilation System is the engineered safety feature utilized for the collection and filtration of fission-product leakage from the containment vessel.

The Special Ventilation Zone of the Auxiliary Building provides a medium-leakage boundary which confines leakage that could conceivably bypass the Shield Building annulus. The safety system associated with the Auxiliary Building Special Ventilation Zone is the Auxiliary Building Special Ventilation System (ABSVS). One of the functions of the ABSVS is to collect and filter any potential fission products that may bypass the Shield Building annulus.

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[1] USAR Section 14.3

[2] USAR Section 14.3.5

[3] USAR Appendix H

Auxiliary Building Special Ventilation System (TS 4.4.d)

Demonstration of the automatic initiation capability is necessary to assure system performance capability.[5]

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.

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.

Isolation Device Positions (TS 4.4.f)

TS 4.4.f.1 ensures each 36 inch containment purge valve is verified sealed closed at 31-day intervals.[6] This Surveillance is designed to ensure that an inadvertent or spurious opening of a containment purge valve does not cause a gross breach of containment. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit off-site doses. Therefore, these valves are required to be in the sealed closed position when critical. A containment purge valve that is sealed closed must be closed with its control switch sealed in the close position. In this application, the term "sealed" has no connotation of leak tightness. The frequency is a result of a NRC initiative, Generic Issue B-24, related to containment purge valve use during plant operations.

TS 4.4.f.2 ensures the 2-inch vent/purge valves are closed as required or, if open, open for an allowable reason. If a 2-inch vent/purge valve is open in violation of this TS, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The TS is not required to be met when the 2-inch vent/purge valves are open for the reasons stated. The valves may be opened for pressure control, ALARA, or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The 2-inch vent/purge valves are capable of closing in the environment following a

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[5] USAR Section 9.6

[6] Letter from Steven A. Varga (NRC) to C.W. Giesler (WPSC) dated April 22, 1983

LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day frequency is consistent with other containment isolation valve requirements discussed.

TS 4.4.f.3.A requires verification that each containment isolation manual valve and blind flange located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The TS helps to ensure that post-accident leakage of radioactive fluids or gases outside of the containment boundary are within design limits. This TS does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The TS specifies that containment isolation valves that are open under administrative controls are not required to meet the TS during the time the valves are open. This TS does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

TS 4.4.f.3.B requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions, is closed. The TS helps to ensure that post-accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. For containment isolation valves inside containment, the frequency of "prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. The TS specifies that containment isolation valves that are open under administrative controls are not required to meet the TS during the time they are open. This TS does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

TS 4.4.f.3.C modifies TS 4.4.f.3 for valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted when above COLD SHUTDOWN for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

ATTACHMENT 2

Letter from Mark E. Reddemann (NMC)

To

Document Control Desk (NRC)

Dated

March 30, 2001

<u>Proposed Amendment 165b</u>

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e. <u>OPERABLE-OPERABILITY</u>

A system or component is OPERABLE or has OPERABILITY when it is capable of performing its intended function within the required range. The system or component shall be considered to have this capability when: (1) it satisfies the LIMITING CONDITIONS FOR OPERATION defined in TS 3.0; and (2) it has been tested periodically in accordance with TS 4.0 and has met its performance requirements.

Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that is required for the system or component to perform its intended function is also capable of performing their related support functions.

f. <u>OPERATING</u>

A system or component is considered to be OPERATING when it is performing the intended function in the intended manner.

g. <u>CONTAINMENT SYSTEM INTEGRITY</u>

CONTAINMENT SYSTEM INTEGRITY is defined to exist when:

1. The nonautomatic Containment System isolation valves and blind flanges are closed, except as provided in TS 3.6.b.

2. The Reactor Containment Vessel and Shield Building equipment hatches are properly closed.

3. At least ONE door in both the personnel and the emergency airlocks is properly closed.

4. The required automatic Containment System isolation valves are OPERABLE, except as provided in TS 3.6.b.

5. All requirements of TS 4.4 with regard to Containment System leakage and test frequency are satisfied.

6. The Shield Building Ventilation System and the Auxiliary Building Special Ventilation System satisfy the requirements of TS 3.6.c.

3.6 CONTAINMENT SYSTEM

APPLICABILITY

Applies to the integrity of the Containment System.

OBJECTIVE

To define the operating status of the Containment System.

SPECIFICATION

a. CONTAINMENT SYSTEM INTEGRITY shall not be violated if there is fuel in the reactor which has been used for power operation, except whenever either of the following conditions remains satisfied:

   1. The reactor is in the COLD SHUTDOWN condition with the reactor vessel head installed, or

   2. The reactor is in the REFUELING shutdown condition.

b. Containment Isolation Valves

   1. When CONTAINMENT SYSTEM INTEGRITY is required, all containment isolation valves and blind flanges shall be OPERABLE, except as permitted by TS 3.6.b.2 and TS 3.6.b.3.

   2. Containment Penetration flow paths can be unisolated intermittently under administrative controls. This TS does not apply to the 36" containment purge valves when they are required to be sealed closed.

   3. When CONTAINMENT SYSTEM INTEGRITY is required, the following conditions of inoperability may exist during the time interval specified. Separate entry is allowed into TS 3.6.b.3 for each penetration flowpath.

      A. For one or more penetration flow paths with two containment isolation valves per penetration with one containment isolation valve inoperable:

         1. Return the valve to OPERABLE status within 24 hours or isolate the affected penetrations flow path by use of at least one:

            a) Closed and de-activated automatic valve, or

            b) Closed manual valve, or

            c) Blind flange, or

d) Check valve with flow through the valve secured

2. Verify the affected flow path is isolated:

   a) For isolation devices outside containment, at least once per 31 days, or

   b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

B. For one or more penetration flow paths with two containment isolation valves per penetration with two containment isolation valves inoperable:

1. Return at least one isolation valve to an OPERABLE status within 1 hour or isolate the affected flow path by use of at least one:

   a) Closed and de-activated automatic valve, or

   b) Closed manual valve, or

   c) Blind flange.

2. Verify the affected flow path is isolated:

   a) For isolation devices outside containment, at least once per 31 days, or

   b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

C. For one or more penetration flow paths with one containment isolation valve and a closed system per penetration with one containment isolation valve inoperable:

1. Return the valve to OPERABLE status within 72 hours or isolate the affected penetrations flow path by use of at least one:

   a) Closed and de-activated automatic valve, or

   b) Closed manual valve, or

   c) Blind flange.

2. Verify the affected flow path is isolated:

a) For isolation devices outside containment, at least once per 31 days, or

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

D. Valves and blind flanges in high radiation areas may be verified, as required by TS 3.6.b.3.A.2, TS 3.6.b.3.B.2, and TS 3.6.b.3.C.2, by use of administrative means.

4. If CONTAINMENT SYSTEM INTEGRITY is required and the OPERABILITY requirements of TS 3.6.b.3 are not met within the times specified, then initiate action to:

A. Achieve HOT STANDBY within the next 6 hours,

B. Achieve HOT SHUTDOWN within the following 6 hours, and

C. Achieve COLD SHUTDOWN within the subsequent 36 hours.

c. All of the following conditions shall be satisfied whenever CONTAINMENT SYSTEM INTEGRITY, as defined by TS 1.0.g, is required:

1. Both trains of the Shield Building Ventilation System, including filters and heaters shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Shield Building Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

2. Both trains of the Auxiliary Building Special Ventilation System including filters and heaters shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Auxiliary Building Special Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

3. Performance Requirements

A. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥ 99% DOP removal and ≥ 99% halogenated hydrocarbon removal.

B. The results of laboratory carbon sample analysis from the Shield Building Ventilation System and the Auxiliary Building Special Ventilation System carbon shall show ≥ 95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C, 95% RH for the Shield Building Ventilation System and 30°C, 95% RH for the Auxiliary Building Special Ventilation System.

C. Fans shall operate within ± 10% of design flow when tested.

d. If the internal pressure of the reactor containment vessel exceeds 2 psi, the condition shall be corrected within 8 hours or the reactor shall be placed in a subcritical condition.

e. The reactor shall not be taken above the COLD SHUTDOWN condition unless the containment ambient temperature is > 40°F.

BASIS

Containment System (TS 3.6)

Containment System Integrity (TS 3.6.a)

The COLD SHUTDOWN condition precludes any energy releases or buildup of containment pressure from flashing of reactor coolant in the event of a system break. The restriction to fuel that has been irradiated during power operation allows initial testing with an open containment when negligible activity exists. The shutdown margin for the COLD SHUTDOWN condition assures subcriticality with the vessel closed even if the most reactive RCC assembly were inadvertently withdrawn. Therefore, the two parts of TS 3.6.a allow CONTAINMENT SYSTEM INTEGRITY to be violated when a fission product inventory is present only under circumstances that preclude both criticality and release of stored energy.

When the reactor vessel head is removed with the CONTAINMENT SYSTEM INTEGRITY violated, the reactor must not only be in the COLD SHUTDOWN condition, but also in the REFUELING shutdown condition. A 5% shutdown margin is specified for REFUELING conditions to prevent the occurrence of criticality under any circumstances, even when fuel is being moved during REFUELING operations.

This specification also prevents positive insertion of reactivity whenever Containment System integrity is not maintained if such addition would violate the respective shutdown margins. Effectively, the boron concentration must be maintained at a predicted concentration of 2,100 ppm[1] or more if the Containment System is to be disabled with the reactor pressure vessel open.

Containment Isolation Valves (TS 3.6.b)

Containment isolation valves form a part of the containment boundary. The containment isolation valves' safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

To be considered OPERABLE, automatic containment isolation valves are required to close within prescribed time limits and to actuate on an automatic isolation signal. Check valves are considered OPERABLE when they have satisfactorily completed their required surveillance testing. Manual isolation components are considered OPERABLE when manual valves are closed, blind flanges are in place, and closed systems are intact.

Penetration flow path(s) may be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in

[1] USAR Table 3.2-1

continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. Specification TS 3.6.b.2 pertains to inoperable valves described in TS 3.6.b.3, manual valves assumed to be closed, and normally closed valves that are not assumed, by the USAR, to automatically close. This allows opening of containment isolation valves without entering the LCO or to open containment isolation valves closed as required by TS, provided the administrative controls are in place to ensure valve closure, if needed.

For these LCO(s), separate Condition entry is allowed for each penetration flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable containment isolation valve. Complying with the Required Actions may allow for continued operation, and subsequent inoperable containment isolation valves are governed by subsequent Condition entry and application of associated Required Actions.

In the event a containment isolation valve in one or more penetration flow paths is inoperable, the affected penetration flow path must be isolated within the specified time constraints. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are 1) a closed and de-activated automatic containment isolation valve, 2) a closed manual valve, 3) a blind flange, and 4) a check valve with flow through the valve secured. For a penetration flow path isolated, the device used to isolate the penetration should be the closest available one to containment. The 24-hour completion time is reasonable, considering the time required to isolate the penetration, perform maintenance, and the relative importance of supporting containment OPERABILITY.

For affected containment penetration flow paths that cannot be restored to OPERABLE status within the required completion time and that have been isolated, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure containment penetrations, requiring isolation following an accident and no longer capable of being automatically isolated, will be in that isolated position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment and capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period is specified as "prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days." This is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

With two containment isolation valves in one or more penetration flow paths inoperable, the affected penetration flow path must be isolated within 1 hour. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1-hour Completion Time is consistent with the ACTIONS of LCO 3.0.c. In the event the affected penetration is isolated, the affected penetration must be verified to be isolated on a periodic basis which remains in effect. This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of "once per 31 days for verifying each affected penetration flow path is isolated" is appropriate considering the fact that the valves are operated under administrative control and the probability of their misalignment is low.

For those penetrations where one of the isolation devices is a closed system, either inside containment or outside containment, a longer outage time is allowed. This condition is only applicable to those penetration flow paths with a single containment isolation valve and a closed system. This longer outage time is due to a closed system subjected to leakage testing, missile protected, and seismic category I piping. Also, a closed system typically has flow through it during normal operation such that any loss of integrity could be observed through leakage detection system inside containment and system walkdowns outside containment. Thus, a 72-hour completion time is considered appropriate given that certain valves may be located inside containment and the reliability of the closed system.

Isolation devices located in high radiation areas shall be verified closed by use of administrative means. Verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these devices once they have been verified to be in the proper position is small.

De-activation of an automatic containment isolation valve is accomplished by removing or interrupting the valves motive force, thus, preventing a change in the valve position by a single active failure. De-activation may be accomplished by opening the supply breaker for a motor operated valve, isolating air to an air operated valve, removing the supply fuse for a solenoid operated valve, or any other means for ensuring the isolation barrier cannot be affected by a single active failure.

Ventilation Systems (TS 3.6.c)

Proper functioning of the Shield Building Ventilation System is essential to the performance of the Containment System. Therefore, except for reasonable periods of maintenance outage for one redundant train of equipment, the complete system should be in readiness whenever CONTAINMENT SYSTEM INTEGRITY is required. Proper functioning of the Auxiliary Building Special Ventilation System is similarly necessary to preclude possible unfiltered leakage through penetrations that enter the Special Ventilation Zone (Zone SV).

Both the Shield Building Ventilation System and the Auxiliary Building Special Ventilation System are designed to automatically start following a safety injection signal. Each of the two trains of both systems has 100% capacity. If one train of either system is found to be inoperable, there is not an immediate threat to the containment system performance and reactor operation may continue while repairs are being made. If both trains of either system are inoperable, the plant will be brought to a condition where the air purification system would not be required.

High efficiency particulate air (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential radioiodine release to the atmosphere. Bypass leakage for the charcoal adsorbers and particulate removal efficiency for HEPA filters are determined by halogenated hydrocarbon and DOP respectively. The laboratory carbon sample test results indicate a radioactive methyl iodine removal efficiency under test conditions which are more severe than accident conditions.

Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers. The performance criteria for the safeguard ventilation fans are stated in Section 5.5 and 9.6 of the USAR. If the performances are as specified, the calculated doses would be less than the guidelines stated in 10 CFR Part 100 for the accidents analyzed.

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

Accident analysis assumes a charcoal adsorber efficiency of 90%.[(2)] To ensure the charcoal adsorbers maintain that efficiency throughout the operating cycle, a safety factor of 2 is used. Therefore, if accident analysis assumes a charcoal adsorber efficiency of 90%, this equates to a methyl iodide penetration of 10%. If a safety factor of 2 is assumed, the methyl iodide penetration is reduced to 5%. Thus, the acceptance criteria of 95% efficient will be used for the charcoal adsorbers.

[(2)] USAR TABLE 14.3-8, "Major Assumptions for Design Basis LOCA Analysis"

Although committing to ASTM D3803-89, it was recognized that ASTM D3803-89 Standard references Military Standards MIL-F-51068D, Filter, Particulate High Efficiency, Fire Resistant, and MIL-F-51079A, Filter, Medium Fire Resistant, High Efficiency, these specification have been superseded. The latest versions, MIL-F-51068F and MIL-F-51079D, have been canceled and superseded by ASME AG-1, Code on Nuclear Air and Gas Treatment. This is an acceptable situation. Consequently, other referenced standards can be substituted if the new standard or methodology is shown to provide equivalent or superior performance to those referenced in ASTM D3803-89.

Containment Pressure (TS 3.6.d)

The 2 psi limit on internal pressure provides adequate margin between the maximum internal pressure of 46 psig and the peak accident pressure resulting from the postulated Design Basis Accident as discussed in Sections 14.2 and 14.3 of the USAR.[3]

The reactor containment vessel is designed for 0.8 psi internal vacuum, the occurrence of which will be prevented by redundant vacuum breaker systems.

Containment Temperature (TS 3.6.e)

The requirement of a 40°F minimum containment ambient temperature is to assure that the minimum containment vessel metal temperature is well above NDTT + 30° criterion for the shell material.

[3] USAR Section 5

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.

f. Containment Isolation Device Position Verification

1. When the reactor is critical, verify each 36 inch containment purge and vent isolation valve is sealed closed every 31 days.

2. When the reactor is critical, verify each 2 inch containment vent isolation valve is closed every 31 days, except when the 2 inch containment vent isolation valves are open for pressure control, ALARA, or air quality considerations for personnel entry, or Surveillances that require the valves to be open.

3. Containment isolation manual valves and blind flanges shall be verified closed as specified in TS 4.4.f.3.a and TS 4.4.f.3.b, except as allowed by TS 4.4.f.3.c.

   a. When greater than COLD SHUTDOWN, verify each containment isolation manual valve and blind flange that is located outside containment and required to be closed during accident conditions is closed every 31 days, except for containment isolation valves that are locked, sealed, or otherwise secured closed or open as allowed by TS 3.6.b.2.

b. Prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN, if not performed in the previous 92 days, verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed, except for containment isolation valves that are locked sealed or otherwise secured closed or open as allowed by TS 3.6.b.2.

c. Valves and blind flanges in high radiation areas may be verified by use of administrative means.

BASIS

Background - Containment Tests (TS 4.4)

The Containment System is designed to provide protection for the public from the consequences of a Design Basis Accident.[1] The Design Basis Accident is an instantaneous double-ended rupture of the cold leg of the Reactor Coolant System. Pressure and temperature behavior subsequent to the accident was determined by calculations evaluating the combined influence of the energy sources, the heat sinks and engineered safety features. The assumptions and effects for containment vessel leakage rate are detailed in the USAR[2] and further amplified in one of its Appendices.[3]

The total containment system consists of two systems. The Primary Containment System consists of a steel structure and its associated engineered safety features systems. The Primary Containment System, also referred to as the Reactor Containment Vessel, is a low-leakage steel shell, including all of its penetrations, designed to confine the radioactive materials that could be released by accidental loss of integrity of the Reactor Coolant System pressure boundary. It is designed for a maximum internal/test pressure of 46 psig and a temperature of 268°F.

The Secondary Containment System consists of the Shield Building, its associated engineered safety features systems, and a Special Ventilation Zone in the Auxiliary Building. The Shield Building is a medium-leakage concrete structure surrounding the Reactor Containment Vessel and is designed to provide a means for collection and filtration of fission-product leakage from the Reactor Containment Vessel following the Design Basis Accident. A 5-ft. annular space is provided between the Reactor Containment Vessel and the Shield Building. The Shield Building Ventilation System is the engineered safety feature utilized for the collection and filtration of fission-product leakage from the containment vessel.

The Special Ventilation Zone of the Auxiliary Building provides a medium-leakage boundary which confines leakage that could conceivably bypass the Shield Building annulus. The safety system associated with the Auxiliary Building Special Ventilation Zone is the Auxiliary Building Special Ventilation System (ABSVS). One of the functions of the ABSVS is to collect and filter any potential fission products that may bypass the Shield Building annulus.

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(1) USAR Section 14.3

(2) USAR Section 14.3.5

(3) USAR Appendix H

Auxiliary Building Special Ventilation System (TS 4.4.d)

Demonstration of the automatic initiation capability is necessary to assure system performance capability.[5]

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.

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.

Isolation Device Positions (TS 4.4.f)

TS 4.4.f.1 ensures each 36 inch containment purge valve is verified sealed closed at 31-day intervals.[6] This Surveillance is designed to ensure that an inadvertent or spurious opening of a containment purge valve does not cause a gross breach of containment. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit off-site doses. Therefore, these valves are required to be in the sealed closed position when critical. A containment purge valve that is sealed closed must be closed with its control switch sealed in the close position. In this application, the term "sealed" has no connotation of leak tightness. The frequency is a result of a NRC initiative, Generic Issue B-24, related to containment purge valve use during plant operations.

TS 4.4.f.2 ensures the 2-inch vent/purge valves are closed as required or, if open, open for an allowable reason. If a 2-inch vent/purge valve is open in violation of this TS, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The TS is not required to be met when the 2-inch vent/purge valves are open for the reasons stated. The valves may be opened for pressure control, ALARA, or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The 2-inch vent/purge valves are capable of closing in the environment following a

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[5] USAR Section 9.6

[6] Letter from Steven A. Varga (NRC) to C.W. Giesler (WPSC) dated April 22, 1983

LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day frequency is consistent with other containment isolation valve requirements discussed.

TS 4.4.f.3.A requires verification that each containment isolation manual valve and blind flange located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The TS helps to ensure that post-accident leakage of radioactive fluids or gases outside of the containment boundary are within design limits. This TS does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The TS specifies that containment isolation valves that are open under administrative controls are not required to meet the TS during the time the valves are open. This TS does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

TS 4.4.f.3.B requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions, is closed. The TS helps to ensure that post-accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. For containment isolation valves inside containment, the frequency of "prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. The TS specifies that containment isolation valves that are open under administrative controls are not required to meet the TS during the time they are open. This TS does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

TS 4.4.f.3.C modifies TS 4.4.f.3 for valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted when above COLD SHUTDOWN for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.