Wisconsin Electric
POWER COMPANY

231 W Michigan, PO Box 2046, Milwaukee, WI 53201-2046 (414) 221-2345

VPNPD-93-201
NRC-93-127

November 23, 1993

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, DC 20555

Gentlemen:

DOCKETS 50-266 AND 50-301
TECHNICAL SPECIFICATION CHANGE REQUEST 163
MODIFICATIONS TO SECTION 15.3.6, "CONTAINMENT SYSTEM"
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In accordance with the requirements of 10 CFR 50.4 and 50.90, Wisconsin Electric Power Company (Licensee) hereby requests amendments to Facility Operating Licenses DPR-24 and DPR-27 for Point Beach Nuclear Plant, Units 1 and 2 respectively, to incorporate changes to the plant Technical Specifications. The proposed revisions will modify Technical Specification Section 15.3.6, "Containment System", to enhance the operating conditions and limiting conditions for operation for containment systems. This change also proposes revisions to Sections 15.1, "Definitions", and 15.4.4, "Containment Tests", to support the changes to Section 15.3.6. Additionally, revisions are proposed to the bases for Section 15.3.6 to support these changes. A description of our current license condition and proposed changes is included as an attachment to this letter. Marked-up Technical Specification pages, a safety evaluation, and the no significant hazards consideration are enclosed.

This Technical Specification Change Request is being submitted because we believe the current limiting conditions for operation regarding containment operability should be more specific regarding requirements for operability and actions to be taken if the requirements are not met. The proposed changes reflect the intent of NUREG 1431, "Westinghouse Improved Standard Technical Specifications".

We have determined that the proposed amendments do not involve a significant hazards consideration, authorize a significant change in the types or total amounts of any effluent release, or result in

A001 1/1

any significant increase in individual or cumulative occupational exposure. Therefore, we conclude that the proposed amendments meet the requirements of 10 CFR 51.22(c)(9) and that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared.

In summary, the proposed changes contained in this package will result in an improvement to the safe operation of Point Beach Nuclear Plant. For this reason, we request that you process this change at your earliest opportunity.

If you require additional information, please contact us.

Sincerely,

Bob Link
Vice President
Nuclear Power

KVA/jg

cc: NRC Resident Inspector
NRC Regional Administrator

ATTACHMENT

DESCRIPTION OF CURRENT LICENSE CONDITION

Section 15.1, "Definitions," includes a definition of containment integrity.

Section 15.3.6, "Containment System," describes the operating conditions and limiting conditions for operation for the containment system.

Section 15.4.4, "Containment Tests," describes the tests that must be performed to verify that containment leakage and structural integrity are acceptable.

DESCRIPTION OF PROPOSED CHANGES

This Technical Specification Change Request proposes modifications to Section 15.3.6 that include more specific limiting conditions for operation for the containment system and associated support equipment. The proposed changes reflect the intent of NUREG 1431, "Westinghouse Improved Standard Technical Specifications." The proposed changes are as follows:

1. The definition of containment integrity in Section 15.1.d is being modified to:

   (a) Delete the requirements regarding automatic and non-automatic containment isolation valves and blind flanges.

   (b) Include the following requirement:

   "Penetrations required to be isolated during accident conditions are either:

   a. Capable of being closed by an operable containment isolation valve, or
   b. Closed by an operable containment isolation valve, or
   c. Closed in accordance with Specifications 15.3.6.A.1.b and 15.3.6.A.1.c."

   (c) Change the requirement regarding containment leakage to:

   "The overall uncontrolled containment leakage is less than L_a."

2. Specification 15.3.6.A.a) is being modified to cover all cases where containment integrity must be maintained. The revised specification will be numbered 15.3.6.A.1 and will read as follows:

"The containment integrity (as defined in 15.1) shall be maintained when a nuclear core is installed in the reactor unless the reactor is in the cold shutdown condition. The containment integrity shall be maintained when the reactor vessel head is removed unless the reactor is in the refueling shutdown condition. If containment integrity is not maintained when required, enter the applicable LCO(s) listed below. If the LCO is met or is no longer applicable prior to expiration of the specified completion time(s), completion of the required action(s) is not required unless otherwise stated."

3. A specification concerning containment operability is proposed for addition as TS 15.3.6.A.1.a:

"Containment Operability

(1) If the containment is inoperable, restore the containment to operable status within one hour.
(2) If the above action cannot be completed within the time specified, place the affected unit in:
    (a) hot shutdown within six hours,
        AND
    (b) cold shutdown within 36 hours."

In order to support this specification, the following text is proposed for addition to the bases:

"The safety design basis for the containment is that the containment must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate. The design allowable leakage rate (L_a) is 0.4% of containment air weight per day at 60 psig (P_a).[1]

Containment operability is maintained by limiting the overall containment leakage rate to within the acceptance criteria of 10 CFR 50, Appendix J (L_a). Compliance with Specification 15.3.6.A.1.a. will ensure a containment configuration that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

If penetration or air lock leakage results in exceeding L_a, Specification 15.3.6.A.1.a. shall be entered simultaneously with the LCO applicable to the penetration or air lock with the excessive leakage. Once the overall containment leakage

rate is restored to less than L_a, Specification 15.3.6.A.1.a. may be exited and operation continued in accordance with the applicable LCO.

In the event the containment is inoperable, containment must be restored to operable status within one hour. The one hour completion time provides a period of time to correct the problem commensurate with the importance of maintaining containment integrity during plant operation. This time period also ensures that the probability of an accident (requiring containment integrity) occurring during periods when containment is inoperable is minimal.

If the containment cannot be restored to operable status within one hour, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least hot shutdown within 6 hours and to cold shutdown within 36 hours of entering 15.3.6.A.1.a.(2). The allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems."

4. A specification concerning containment isolation valves, except purge supply and exhaust valves, is proposed for addition as TS 15.3.6.A.1.b:

"Containment Isolation Valves, EXCEPT Purge Supply and Exhaust Valves

Each containment penetration must be operable to satisfy containment integrity. Penetration flow paths may be un-isolated intermittently under administrative controls. Separate LCO entry is allowed for each penetration flow path. Enter applicable LCOs for systems made inoperable by inoperable containment isolation valves.

If penetration leakage results in exceeding the overall containment leakage rate acceptance criteria (L_a), enter 15.3.6.A.1.a. in addition to the applicable LCO below.

(1) For penetration flow paths with two containment isolation valves and
    (a) ONE containment isolation valve inoperable:
        (i) isolate the affected penetration flow path by use of at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured within four hours,
        AND

(ii) verify the affected penetration flow path is isolated;
- once every 31 days for isolation devices outside containment,
AND
- prior to exceeding 200°F, if not performed within the previous 92 days, for isolation devices inside containment.

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

(b) TWO containment isolation valves inoperable:
(i) isolate the affected penetration flow path by use of at least one closed and deactivated automatic valve, closed manual valve, or blind flange within one hour,
AND
(ii) verify the affected penetration flow path is isolated;
- once every 31 days for isolation devices outside containment,
AND
- prior to exceeding 200°F, if not performed within the previous 92 days, for isolation devices inside containment.

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

(2) For penetration flow paths with one containment isolation valve and a closed system and
(a) one containment isolation valve inoperable:
(i) isolate the affected penetration flow path by use of at least one closed and deactivated automatic valve, closed manual valve, or blind flange within four hours,
AND
(ii) verify the affected penetration flow path is isolated;
- once every 31 days for isolation devices outside containment,
AND
- prior to exceeding 200°F, if not performed within the previous 92 days, for isolation devices inside containment.

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

(3) If any of the above actions cannot becompleted within the time specified, place the affected unit in:
(a) hot shutdown within six hours,
AND
(b) cold shutdown within 36 hours."

In order to support this specification, the following text is proposed for addition to the bases:

"The containment isolation valves form part of the containment pressure boundary and provide nonessential (i.e., not required to mitigate the consequences of an accident) fluid penetrations with two isolation barriers that are closed on a containment isolation signal. These isolation barriers are either passive or active (automatic). Passive isolation barriers are manual valves, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems. Active isolation barriers are check valves or other automatic valves designed to close without operator action following an accident. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analyses.

The automatic containment isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The containment purge supply and exhaust valves are too large to be qualified for automatic closure from their open positions under DBA conditions and must be maintained closed and deactivated except as defined in Specification 15.3.6.A.1.c. The normally closed containment isolation valves are considered operable when manual valves are closed, automatic valves are deactivated in their closed position, blind flanges are in place, and closed systems are intact. Specification 15.3.6.A.1.b. provides assurance that the containment isolation valves will perform their designed safety functions to control leakage from the containment during accidents.

For the purposes of this section, 'deactivated automatic valve' is defined as the valve closed with the motive force removed.

Specification 15.3.6.A.1.b. applies to all penetration flow paths, except for purge supply and exhaust penetration flow paths. Containment penetration flow paths may be un-isolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls who is in

continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. Due to the size of the containment purge line penetration and the fact that those penetrations exhaust directly from the containment atmosphere to the environment, the penetration flow path containing these valves may not be opened under administrative controls. A single purge valve in a penetration flow path may be opened to effect repairs to an inoperable valve, as allowed by Specification 15.3.6.A.1.c.

If one containment isolation valve in a penetration flow path with two containment isolation valves is inoperable (except for purge supply and exhaust valves), the affected penetration flow path must be isolated. 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 deactivated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For a penetration flow path isolated in accordance with Specification 15.3.6.A.1.b.(1)(a)(i), the valve used to isolate the penetration should be the closest available one to containment. The penetration must be isolated within four hours. The four hour completion time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment operability during plant operation.

Penetration flow paths isolated in accordance with Specification 15.3.6.A.1.b.(1)(a)(i) must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident, and no longer capable of being automatically isolated, will be in the isolation position should an event occur. This required action does not require any testing or valve 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. The completion time of once per 31 days for isolation devices outside containment is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to exceeding 200°F, if not performed within the previous 92 days" 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.

Specification 15.3.6.A.1.b.(1)(a)(ii) allows valves and blind flanges located in high radiation areas 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. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

If two containment isolation valves in a penetration flow path are inoperable (except for purge supply and exhaust valves) the affected penetration flow path must be isolated within one 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 deactivated automatic valve, a closed manual valve, and a blind flange. The one hour completion time is consistent with Specification 15.3.6.A.1.a.

Penetrations isolated in accordance with Specification 15.3.6.A.1.b.(1)(b)(i) must be verified to be isolated on a periodic basis. The reason for this action and the basis for the completion times are the same as for Specification 15.3.6.A.1.b.(1)(a)(i). Specification 15.3.6.A.1.b.(1)(b)(ii) allows valves and blind flanges located in high radiation areas 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. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

If a containment isolation valve in a penetration with one containment isolation valve and a closed system is inoperable, the affected penetration flow path must be isolated within four hours. 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 deactivated automatic valve, a closed manual valve, and a blind flange. A check valve may not be used to isolate the affected penetration flow path. The four hour completion time is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of maintaining containment integrity during plant operation.

Penetrations isolated in accordance with Specification 15.3.6.A.1.b.(2)(a)(i) must be verified to be isolated on a periodic basis. The reason for this action and the basis for the completion times are the same as for Specification 15.3.6.A.1.b.(1)(a)(i). Specification 15.3.6.A.1.b.(2)(a)(ii) allows valves and blind flanges located in high radiation areas 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. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

If the required actions and associated completion times are not met, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least hot shutdown within 6 hours and to cold shutdown within 36 hours of entering 15.3.6.A.1.b.(3). These times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems."

5. Existing Specification 15.3.6.C, "Containment Purge Supply and Exhaust Valves," is being moved to TS 15.3.6.A.1.c and modified to read as follows:

"The containment purge supply and exhaust valves shall be locked closed and may not be opened unless the reactor is in the cold shutdown or refueling shutdown condition.

(1) One of the redundant valves in the purge supply and exhaust lines may be opened to perform the repairs required to conform with TS 15.4.4.II.B.
(2) If containment purge supply and exhaust penetration leakage results in exceeding the overall containment leakage rate acceptance criteria (L_a), enter 15.3.6.A.1.a."

6. A specification concerning containment air locks is proposed as TS 15.3.6.A.1.d:

"Containment Air Locks

Both containment air locks shall be operable. Entry and exit is permissible to perform repairs on the affected air lock components. Separate LCO entry is allowed for each air lock.

If air lock leakage results in exceeding the overall containment leakage rate acceptance criteria (L_a), enter 15.3.6.A.1.a. in addition to the applicable LCO below.

(1) If ONE door is inoperable in a containment air lock:
   (a) verify the operable door is closed in the affected air lock within one hour,
   AND
   (b) lock the operable door in the affected air lock within 24 hours,
   AND
   (c) verify the operable door is locked closed in the affected air lock once per 31 days. Air lock doors in high radiation areas may be verified locked closed by administrative means.

   The actions listed above are not applicable if both doors in the same air lock are inoperable and Specification 15.3.6.A.1.d.(3) is entered. Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable.

(2) If the containment air lock door interlock mechanism is inoperable:
   (a) verify an operable door is closed in the affected air lock within one hour,
   AND
   (b) lock an operable door closed in the affected air lock within 24 hours,
   AND
   (c) verify an operable door is locked closed in the affected air lock once per 31 days. Air lock doors in high radiation areas may be verified locked closed by administrative means.

   The actions listed above are not applicable if both doors in the same air lock are inoperable and Specification 15.3.6.A.1.d.(3) is entered. Entry and exit of containment is permissible under the control of a dedicated operator.

(3) If an air lock is inoperable for reasons other than 15.3.6.A.1.d.(1) or (2):
   (a) initiate action to evaluate overall containment leakage rate per Specification 15.3.6.A.1.a. immediately,
   AND
   (b) verify a door is closed in the affected air lock within one hour,
   AND

(c) restore air lock to operable status within 36 hours.

(4) If any of the above actions cannot be completed within the time specified, place the affected unit in:
(a) hot shutdown within six hours,
AND
(b) cold shutdown within 36 hours.

In order to support this specification, the following text is proposed for addition to the bases:

"Containment air locks form part of the containment pressure boundary and provide a means for personnel access during all operating conditions. The doors are interlocked to prevent simultaneous opening. During periods when containment is not required to be operable, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. Each air lock door has been designed and tested to certify its ability to withstand a pressure in excess of the maximum expected pressure following a DBA in containment. As such, closure of a single door supports containment integrity. Each of the doors contains double gasketed seals and local leakage rate testing capability to ensure pressure integrity. To effect a leak tight seal, the air lock design uses pressure seated doors (i.e., an increase in containment internal pressure results in increased sealing force on each door).

Each air lock is required to be operable. For the air lock to be considered operable, the air lock interlock mechanism must be operable, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be operable. For the purposes of this section, 'air lock door' includes the door itself, equalizing valve, operating mechanism seal, and door seals. The interlock mechanism allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be operable. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into and exit from containment.

Specification 15.3.6.A.1.d. allows entry and exit to perform repairs on the affected air lock component. If the outer door is inoperable, then it may be easily accessed to repair. If the inner door is the one that is inoperable, however, then a short time exists when the containment boundary is not intact (during access through the outer

door). The ability to open the operable door, even if it means the containment boundary is temporarily not intact, is acceptable due to the low probability of an event that could pressurize the containment during the short time in which the operable door is expected to be open. After each entry and exit, the operable door must be immediately closed. If ALARA conditions permit, entry and exit should be via an operable air lock.

If one air lock door in a containment air lock is inoperable, the operable door must be verified closed in the affected air lock. This ensures that a leak tight containment barrier is maintained by the use of an operable air lock door. This action must be completed within one hour. This time period is consistent with Specification 15.3.6.A.1.a., which requires that containment be restored to operable status within one hour.

In addition, the affected air lock penetration must be isolated by locking closed the operable air lock door within 24 hours. Locking the door may be accomplished using a padlock or red seal. The 24 hour completion time is reasonable for locking the operable air lock door, considering the operable door of the affected air lock is being maintained closed.

Specification 15.3.6.A.1.d.(1)(c) verifies that an air lock with an inoperable door has been isolated by the use of a locked and closed operable air lock door. This ensures that an acceptable containment leakage boundary is maintained. The completion time of once per 31 days is based on engineering judgment and is considered adequate in view of the low likelihood of a locked door being mispositioned and other administrative controls. Air lock doors located in high radiation areas are allowed to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

Specification 15.3.6.A.1.d.(1) does not apply when both doors in an air lock are inoperable. If both doors in the same air lock are inoperable, an operable door is not available to be closed. Specification 15.3.6.A.1.d.(3) contains the appropriate remedial actions.

Specification 15.3.6.A.1.d.(1) allows use of the air lock for entry and exit for 7 days under administrative controls. Containment entry may be required on a periodic basis to perform TS Surveillances and required actions, as well as

other activities on equipment inside containment that are required by TS or activities on equipment that support TS required equipment. This is not intended to preclude performing other activities (i.e., non-TS required activities) if the containment is entered, using the inoperable air lock, to perform an allowed activity listed above. This allowance is acceptable due to the low probability of an event that could pressurize the containment during the short time that the operable door is expected to be open.

For an inoperable air lock door interlock mechanism in a containment air lock, the required actions and associated completion times are consistent with those specified in 15.3.6.A.1.d.(1).

Air lock doors located in high radiation areas are allowed to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

Specification 15.3.6.A.1.d.(2) does not apply when both doors in an air lock are inoperable. If both doors in the same air lock are inoperable, an operable door is not available to be closed. Specification 15.3.6.A.1.d.(3) contains the appropriate remedial actions.

Specification 15.3.6.A.1.d.(2) allows entry into and exit from containment under the control of a dedicated individual stationed at the air lock to ensure that only one door is opened at a time (i.e., the individual performs the function of the interlock).

If an air lock is inoperable for reasons other than those described in Specification 15.3.6.A.1.d.(1) or (2), Specification 15.3.6.A.1.d.(3) requires action be initiated immediately to evaluate previous combined leakage rates using current air lock test results. An evaluation is acceptable, since it is overly conservative to immediately declare the containment inoperable if both doors in an air lock have failed a seal test or if the overall air lock leakage is not within limits. In many instances (e.g., only one seal per door has failed), containment remains operable, yet only one hour (per 15.3.6.A.1.a.) would be provided to restore the air lock door to operable status prior to requiring a plant shutdown. In addition, even with both doors failing the seal test, the overall containment leakage rate can still be within limits.

Specification 15.3.6.A.1.d.(3) requires that one door in the affected containment air lock must be verified to be closed within one hour. This time period is consistent with Specification 15.3.6.A.1.a., which requires that containment be restored to operable status within one hour.

Additionally, the affected air lock(s) must be restored to operable status within 36 hours. The specified time period is considered reasonable for restoring an inoperable air lock to operable status, including a post-maintenance pressure test, assuming that at least one door is maintained closed in each affected air lock.

Specification 15.3.6.A.1.d.(3) may be exited as soon as the air lock is repaired to the extent that Specification 15.3.6.A.1.d.(1) or (2) applies.

If the required actions and associated completion times are not met, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least hot shutdown within 6 hours and to cold shutdown within 36 hours of entering 15.3.6.A.1.d.(4). The allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems."

7. Existing Specification 15.3.6.A.b) is being deleted as it was incorporated into proposed Specification 15.3.6.A.1.

8. Existing Specifications 15.3.6.A.c) and d) are being renumbered to Specifications 15.3.6.C. and D.

9. Existing Specification 15.3.6.B, "Internal Pressure," is being modified to read as follows:

"1. If the internal pressure exceeds 3 psig or the internal vacuum exceeds 2.0 psig, the condition shall be corrected within one hour.

2. If the above action cannot be completed within the time specified, place the affected unit in:
   a. hot shutdown within 6 hours,
      AND
   b. cold shutdown within 36 hours."

In order to support this modification, the following text is proposed for addition to the bases:

"When containment pressure is not within the limits of the LCO, it must be restored to within these limits within one hour. The required action is necessary to return operation

to within the bounds of the containment analysis. The one hour completion time is consistent with the actions of Specification 15.3.6.A.1.a., which requires the containment be restored to operable status within one hour.

If containment pressure cannot be restored to within limits within the required completion time, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least hot shutdown within 6 hours and to cold shutdown within 36 hours of entering 15.3.6.B.2. The allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems."

10. Existing Specification 15.3.6.D is being renumbered to Specification 15.3.6.E.

11. Existing Specification 15.4.4.II.B.1 is being modified to read as follows:

"The total leakage from items II.A.5 and III.A.3 shall not exceed 0.6 L_a.

a. If at any time it is determined that 0.6 L_a is exceeded, enter the applicable LCO(s) of Section 15.3.6. immediately."

12. Existing Specification 15.4.4.III.C will be incorporated into Specification 15.4.4.III.B to read as follows:

"The total leakage from items II.A.5 and III.A.3 shall not exceed 0.6 L_a.

a. If at any time it is determined that 0.6 L_a is exceeded, enter the applicable LCO(s) of Section 15.3.6. immediately."

13. Existing Specification 15.4.4.III.D will be renumbered to 15.4.4.III.C.

~~d~~D. Containment Integrity*

Containment integrity is defined to exist when:

1) Penetrations required to be isolated during accident conditions are either:

   a. Capable of being closed by an operable containment isolation valve,

      OR

   b. Closed by an operable containment isolation valve,

      OR

   c. Closed in accordance with Specifications 15.3.6.A.1.b and 15.3.6.A.1.c.

~~1) All non automatic containment isolation valves and blind flanges are closed as required.~~

2) The equipment hatch is properly closed.

3) At least one door in each personnel air lock is properly closed.

~~4) All automatic containment isolation valves are operable or are secured closed.~~

~~5~~4) The overall uncontrolled containment leakage ~~satisfies Specification 15.4.4~~ is less than L_a.

~~e~~E. Protective Instrumentation Logic

1) Analog Channel

   An analog channel is an arrangement of components and modules as required to generate a single protective action signal when required by a plant condition. An analog channel loses its identity where single action signals are combined.

---

*Containment isolation valves are discussed in FSAR Section 5.2.

15.3.6 CONTAINMENT SYSTEM

Applicability: Applies to the integrity of reactor containment.

Objective:

To define the operating status of the reactor containment for plant operation.

Specification:

A. Containment Integrity

~~a)~~ 1. The containment integrity (as defined in 15.1) shall ~~not~~ be ~~violated~~ maintained when a nuclear core is installed in the reactor unless the reactor is in the cold shutdown condition. The containment integrity shall be maintained when the reactor vessel head is removed unless the reactor is in the refueling shutdown condition. If containment integrity is not maintained when required, enter the applicable LCO(s) listed below. If the LCO is met or is no longer applicable prior to expiration of the specified completion time(s), completion of the required action(s) is not required unless otherwise stated.

a. Containment Operability

(1) If the containment is inoperable, restore the containment to operable status within one hour.

(2) If the above action cannot be completed within the time specified, place the affected unit in:
(a) hot shutdown within six hours,
AND
(b) cold shutdown within 36 hours.

b. Containment Isolation Valves, EXCEPT Purge Supply and Exhaust Valves

Each containment penetration must be operable to satisfy containment integrity. Penetration flow paths may be unisolated intermittently under administrative controls. Separate LCO entry is allowed for each penetration flow path. Enter applicable LCOs for systems made inoperable by inoperable containment isolation valves.

If penetration leakage results in exceeding the overall containment leakage rate acceptance criteria (L_a), enter 15.3.6.A.1.a. in addition to the applicable LCO below.

(1) For penetration flow paths with two containment isolation valves and

(a) ONE containment isolation valve inoperable:

(i) isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured within four hours,

AND

(ii) verify the affected penetration flow path is isolated;

- once every 31 days for isolation devices outside containment,

AND

- prior to exceeding 200 °F, if not performed within the previous 92 days, for isolation devices inside containment.

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

(b) TWO containment isolation valves inoperable:

(i) isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange within one hour,

AND

(ii) verify the affected penetration flow path is isolated;

- once every 31 days for isolation devices outside containment,

  AND

- prior to exceeding 200 °F, if not performed within the previous 92 days, for isolation devices inside containment.

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

(2) For penetration flow paths with one containment isolation valve and a closed system and

(a) one containment isolation valve inoperable:

(i) isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange within four hours,

AND

(ii) verify the affected penetration flow path is isolated;

- once every 31 days for isolation devices outside containment,

  AND

- prior to exceeding 200 °F, if not performed within the previous 92 days, for isolation devices inside containment.

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

(3) If any of the above actions cannot be completed within the time specified, place the affected unit in:

(a) hot shutdown within six hours,

AND

(b) cold shutdown within 36 hours.

c. Containment Purge Supply and Exhaust Valves

The containment purge supply and exhaust valves shall be locked closed and may not be opened unless the reactor is in the cold shutdown or refueling shutdown condition.

(1) One of the redundant valves in the purge supply and exhaust lines may be opened to perform the repairs required to conform with TS 15.4.4.II.B.

(2) If containment purge supply and exhaust penetration leakage results in exceeding the overall containment leakage rate acceptance criteria (L_a), enter 15.3.6.A.1.a.

d. Containment Air Locks

Both containment air locks shall be operable. Entry and exit is permissible to perform repairs on the affected air lock components. Separate LCO entry is allowed for each air lock.

If air lock leakage results in exceeding the overall containment leakage rate acceptance criteria (L_a), enter 15.3.6.A.1.a. in addition to the applicable LCO below.

(1) If ONE door is inoperable in a containment air lock:

(a) verify the operable door is closed in the affected air lock within one hour,

AND

(b) lock the operable door in the affected air lock within 24 hours,

AND

(c) verify the operable door is locked closed in the affected air lock once per 31 days. Air lock doors in high radiation areas may be verified locked closed by administrative means.

The actions listed above are not applicable if both doors in the same air lock are inoperable and Specification 15.3.6.A.1.d.(3) is entered. Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable.

(2) If the containment air lock door interlock mechanism is inoperable:

(a) verify an operable door is closed in the affected air lock within one hour,

AND

(b) lock an operable door closed in the affected air lock within 24 hours,

AND

(c) verify an operable door is locked closed in the affected air lock once per 31 days. Air lock doors in high radiation areas may be verified locked closed by administrative means.

The actions listed above are not applicable if both doors in the same air lock are inoperable and Specification 15.3.6.A.1.d.(3) is entered. Entry and exit of containment is permissible under the control of a dedicated operator.

(3) If an air lock is inoperable for reasons other than 15.3.6.A.1.d.(1) or (2):

(a) initiate action to evaluate overall containment leakage rate per Specification 15.3.6.A.1.a. immediately,

AND

(b) verify a door is closed in the affected air lock within one hour,

AND

(c) restore air lock to operable status within 36 hours.

(4) If any of the above actions cannot be completed within the time specified, place the affected unit in:

(a) hot shutdown within six hours,

AND

(b) cold shutdown within 36 hours.

~~b) The containment integrity shall not be violated when the reactor vessel head is removed unless the reactor is in the refueling shutdown condition.~~

~~c) Positive reactivity changes shall not be made by rod drive motion when the containment integrity is not intact except for the testing of one bank of rods at a time, rod disconnecting, and rod reconnecting provided the reactor is initially subcritical by at least 5% Δk/k.~~

~~d) Positive reactivity changes shall not be made by boron dilution when the containment integrity is not intact unless the boron concentration in the reactor is maintained >1800 ppm.~~

B. Internal Pressure

1. If the internal pressure exceeds 3 psig or the internal vacuum exceeds 2.0 psig, the condition shall be corrected ~~or the reactor rendered sub-critical.~~ within one hour.

2. If the above action cannot be completed within the time specified, place the affected unit in:

   a. hot shutdown within six hours,

      AND

   b. cold shutdown within 36 hours.

~~C. Containment Purge Supply and Exhaust Valves~~

~~The containment purge supply and exhaust valves shall be locked closed and may not be opened unless the reactor is in the cold shutdown or refueling shutdown condition.~~

~~a. One of the redundant valves in the purge supply and exhaust lines may be opened to perform the repairs required to conform with TS 15.4.4.II.B. The time duration and shutdown requirements of TS 15.4.4.II.B.1.b shall be applied.~~

C. Positive reactivity changes shall not be made by rod drive motion when the containment integrity is not intact except for the testing of one bank of rods at a time, rod disconnecting, and rod reconnecting provided the reactor is initially subcritical by at least 5% $\Delta k/k$.

D. Positive reactivity changes shall not be made by boron dilution when the containment integrity is not intact unless the boron concentration in the reactor is maintained > 1800 ppm.

~~D~~E. Containment Structural Integrity

The structural integrity of the reactor containment shall be maintained in accordance with the surveillance criteria specified in 15.4.4.V and 15.4.4.VII.

1. If more than one tendon is observed with a prestressing force between the predicted lower limit (PLL) and 90% of the PLL or if one tendon is observed with prestressing force less than 90% of the PLL, the tendon(s) shall be restored to the required level of integrity within 15 days or the reactor shall be in hot standby within the next six hours and in cold shutdown within the following 30 hours. An engineering evaluation of the situation shall be conducted and a special report submitted in accordance with Specification 15.4.4.VII.D within 30 days.

2. With an abnormal degradation of the containment structural integrity in excess of that specified in 15.3.6.D.1, and at a level below the acceptance criteria of Specification 15.4.4.VII, restore the containment structural integrity to the required level within 72 hours or be in hot shutdown within the next six hours and in cold shutdown within the following 30 hours. Perform an engineering evaluation of the containment structural integrity and provide a special report in accordance with Specification 15.4.4.VII.D within 30 days.

Basis

Specification 15.3.6.A.1

The Reactor Coolant System conditions of cold shutdown assure that no steam will be formed and hence there would be no pressure buildup in the containment if the Reactor Coolant System ruptures.

Specification 15.3.6.A.1.a.

The safety design basis for the containment is that the containment must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate. The design allowable leakage rate (L_a) is 0.4% of containment air weight per day at 60 psig (P_a).[1]

Containment operability is maintained by limiting the overall containment leakage rate to within the acceptance criteria of 10 CFR 50, Appendix J (L_a). Compliance with Specification 15.3.6.A.1.a. will ensure a containment configuration that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

If penetration or air lock leakage results in exceeding L_a, Specification 15.3.6.A.1.a. shall be entered simultaneously with the LCO applicable to the penetration or air lock with the excessive leakage. Once the overall containment leakage rate is restored to less than L_a, Specification 15.3.6.A.1.a. may be exited and operation continued in accordance with the applicable LCO.

Specification 15.3.6.A.1.a.(1)

In the event the containment is inoperable, containment must be restored to operable status within one hour. The one hour completion time provides a period of time to correct the problem commensurate with the importance of maintaining containment integrity during plant operation. This time period also ensures that the probability of an accident (requiring containment integrity) occurring during periods when containment is inoperable is minimal.

Specification 15.3.6.A.1.a.(2)

If the containment cannot be restored to operable status within one hour, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least hot shutdown within six hours and to cold shutdown within 36 hours of entering 15.3.6.A.1.a.(2). The allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Specification 15.3.6.A.1.b

The containment isolation valves form part of the containment pressure boundary and provide non-essential (i.e., not required to mitigate the consequences of an accident) fluid penetrations with two isolation barriers that are closed on a containment isolation signal. These isolation barriers are either passive or active (automatic). Passive isolation barriers are manual valves, de-activated automatic valves secured in their closed position (including check valves with

flow through the valve secured), blind flanges, and closed systems. Active isolation barriers are check valves or other automatic valves designed to close without operator action following an accident. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analyses.

The automatic containment isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The containment purge supply and exhaust valves are too large to be qualified for automatic closure from their open positions under DBA conditions and must be maintained closed and deactivated except as defined in Specification 15.3.6.A.1.c. The normally closed containment isolation valves are considered operable when manual valves are closed, automatic valves are de-activated in their closed position, blind flanges are in place, and closed systems are intact. Specification 15.3.6.A.1.b. provides assurance that the containment isolation valves will perform their designed safety functions to control leakage from the containment during accidents.

For the purposes of this section, 'de-activated automatic valve' is defined as the valve closed with the motive force removed.

Specification 15.3.6.A.1.b. applies to all penetration flow paths, except for purge supply and exhaust penetration flow paths. Containment penetration flow paths may be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls who is in continuous communication with the control room. In this way,

the penetration can be rapidly isolated when a need for containment isolation is indicated. Due to the size of the containment purge line penetration and the fact that those penetrations exhaust directly from the containment atmosphere to the environment, the penetration flow path containing these valves may not be opened under administrative controls. A single purge valve in a penetration flow path may be opened to effect repairs to an inoperable valve, as allowed by Specification 15.3.6.A.1.c.

Specification 15.3.6.A.1.b.(1)(a)

If one containment isolation valve in a penetration flow path with two containment isolation valves is inoperable (except for purge supply and exhaust valves) the affected penetration flow path must be isolated. 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 containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For a penetration flow path isolated in accordance with Specification 15.3.6.A.1.b.(1)(a)(i), the valve used to isolate the penetration should be the closest available valve to containment. The penetration must be isolated within four hours. The four hour completion time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment operability during plant operation.

Penetration flow paths isolated in accordance with Specification 15.3.6.A.1.b.(1)(a)(i) must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated

following an accident, and no longer capable of being automatically isolated, will be in the isolation position should an event occur. This required action does not require any testing or valve 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. The completion time of once per 31 days for isolation devices outside containment is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to exceeding 200°F, if not performed within the previous 92 days" 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.

Specification 15.3.6.A.1.b.(1)(a)(ii) allows valves and blind flanges located in high radiation areas 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. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

Specification 15.3.6.A.1.b.(1)(b)

If two containment isolation valves in a penetration flow path are inoperable (except for purge supply and exhaust valves) the affected penetration flow path must be isolated within one 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 one hour completion time is consistent with Specification 15.3.6.A.1.a.

Penetrations isolated in accordance with Specification 15.3.6.A.1.b.(1)(b)(i) must be verified to be isolated on a periodic basis. The reason for this action and the basis for the completion times are the same as for Specification 15.3.6.A.1.b.(1)(a)(i). Specification 15.3.6.A.1.b.(1)(b)(ii) allows valves and blind flanges located in high radiation areas 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. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

Specification 15.3.6.A.1.b.(2)

If a containment isolation valve in a penetration with one containment isolation valve and a closed system is inoperable, the affected penetration flow path must be isolated within four hours. 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. A check valve may not be used to isolate the affected penetration flow path. The four hour completion time is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of maintaining containment integrity during plant operation.

Penetrations isolated in accordance with Specification 15.3.6.A.1.b.(2)(a)(i) must be verified to be isolated on a periodic basis. The reason for this action and the basis for the completion times are the same as for Specification 15.3.6.A.1.b.(1)(a)(i). Specification 15.3.6.A.1.b.(2)(a)(ii) allows valves and blind flanges located in high radiation areas 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. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

Specification 15.3.6.A.1.b.(3)

If the required actions and associated completion times are not met, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least hot shutdown within six hours and to cold shutdown within 36 hours of entering 15.3.6.A.1.b.(3). These times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Specification 15.3.6.A.1.c.

The containment purge supply and exhaust valves are required to be locked closed during plant operations since these valves have not been demonstrated capable of closing from the full open position during a design basis loss-of-coolant accident. Maintaining these valves locked closed during plant operation ensures that excessive quantities of radioactive materials will not be released via the

containment purge system in the event of a design basis loss-of-coolant accident. The containment purge supply and exhaust valves will be locked closed by providing locking devices on the control board operators for these valves.

Specification 15.3.6.A.1.d.

Containment air locks form part of the containment pressure boundary and provide a means for personnel access during all operating conditions. The doors are interlocked to prevent simultaneous opening. During periods when containment is not required to be operable, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. Each air lock door has been designed and tested to certify its ability to withstand a pressure in excess of the maximum expected pressure following a DBA in containment. As such, closure of a single door supports containment integrity. Each of the doors contains double gasketed seals and local leakage rate testing capability to ensure pressure integrity. To effect a leak tight seal, the air lock design uses pressure seated doors (i.e., an increase in containment internal pressure results in increased sealing force on each door).

Each air lock is required to be operable. For the air lock to be considered operable, the air lock interlock mechanism must be operable, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be operable. For the purposes of this section, 'air lock door' includes the door itself, equalizing valve, operating mechanism seal, and door seals. The interlock mechanism allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not

exist when containment is required to be operable. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into and exit from containment.

Specification 15.3.6.A.1.d. allows entry and exit to perform repairs on the affected air lock component. If the outer door is inoperable, then it may be easily accessed to repair. If the inner door is the one that is inoperable, however, then a short time exists when the containment boundary is not intact (during access through the outer door). The ability to open the operable door, even if it means the containment boundary is temporarily not intact, is acceptable due to the low probability of an event that could pressurize the containment during the short time in which the operable door is expected to be open. After each entry and exit, the operable door must be immediately closed. If ALARA conditions permit, entry and exit should be via an operable air lock.

Specification 15.3.6.A.1.d.(1)

If one air lock door in a containment air lock is inoperable, the operable door must be verified closed in the affected air lock. This ensures that a leak tight containment barrier is maintained by the use of an operable air lock door. This action must be completed within one hour. This time period is consistent with Specification 15.3.6.A.1.a., which requires that containment be restored to operable status within one hour.

In addition, the affected air lock penetration must be isolated by locking closed the operable air lock door within 24 hours. Locking the door may be accomplished

using a padlock or red seal. The 24 hour completion time is reasonable for locking the operable air lock door, considering the operable door of the affected air lock is being maintained closed.

Specification 15.3.6.A.1.d.(1)(c) verifies that an air lock with an inoperable door has been isolated by the use of a locked and closed operable air lock door. This ensures that an acceptable containment leakage boundary is maintained. The completion time of once per 31 days is based on engineering judgment and is considered adequate in view of the low likelihood of a locked door being mispositioned and other administrative controls. Air lock doors located in high radiation areas are allowed to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

Specification 15.3.6.A.1.d.(1) does not apply when both doors in an air lock are inoperable. If both doors in the same air lock are inoperable, an operable door is not available to be closed. Specification 15.3.6.A.1.d.(3) contains the appropriate remedial actions.

Specification 15.3.6.A.1.d.(1) allows use of the air lock for entry and exit for 7 days under administrative controls. Containment entry may be required on a periodic basis to perform TS Surveillances and required actions, as well as other activities on equipment inside containment that are required by TS or activities on equipment that support TS-required equipment. This is not intended to preclude performing other activities (i.e., non-TS-required activities) if the

containment is entered, using the inoperable air lock, to perform an allowed activity listed above. This allowance is acceptable due to the low probability of an event that could pressurize the containment during the short time that the operable door is expected to be open.

Specification 15.3.6.A.1.d.(2)

For an inoperable air lock door interlock mechanism in a containment air lock, the required actions and associated completion times are consistent with those specified in 15.3.6.A.1.d.(1).

Air lock doors located in high radiation areas are allowed to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

Specification 15.3.6.A.1.d.(2) does not apply when both doors in an air lock are inoperable. If both doors in the same air lock are inoperable, an operable door is not available to be closed. Specification 15.3.6.A.1.d.(3) contains the appropriate remedial actions.

Specification 15.3.6.A.1.d.(2) allows entry into and exit from containment under the control of a dedicated individual stationed at the air lock to ensure that only one door is opened at a time (i.e., the individual performs the function of the interlock).

Specification 15.3.6.A.1.d.(3)

If an air lock is inoperable for reasons other than those described in Specification 15.3.6.A.1.d.(1) or (2), Specification 15.3.6.A.1.d.(3) requires action be initiated immediately to evaluate previous combined leakage rates using current air lock test results. An evaluation is acceptable, since it is overly conservative to immediately declare the containment inoperable if both doors in an air lock have failed a seal test or if the overall air lock leakage is not within limits. In many instances (e.g., only one seal per door has failed), containment remains operable, yet only one hour (per 15.3.6.A.1.a.) would be provided to restore the air lock door to operable status prior to requiring a plant shutdown. In addition, even with both doors failing the seal test, the overall containment leakage rate can still be within limits.

Specification 15.3.6.A.1.d.(3) requires that one door in the affected containment air lock must be verified to be closed within one hour. This time period is consistent with Specification 15.3.6.A.1.a., which requires that containment be restored to operable status within one hour.

Additionally, the affected air lock(s) must be restored to operable status within 36 hours. The specified time period is considered reasonable for restoring an inoperable air lock to operable status, including a post-maintenance pressure test, assuming that at least one door is maintained closed in each affected air lock.

Specification 15.3.6.A.1.d.(3) may be exited as soon as the air lock is repaired to the extent that Specification 15.3.6.A.1.d.(1) or (2) applies.

Specification 15.3.6.A.1.d.(4)

If the required actions and associated completion times are not met, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least hot shutdown within six hours and to cold shutdown within 36 hours of entering 15.3.6.A.1.d.(4). The allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Specification 15.3.6.B.

Regarding internal pressure limitations, the containment design pressure of 60 psig would not be exceeded if the internal pressure before a major loss-of-coolant accident were as much as 6 psig. [2] The containment is designed to withstand an internal vacuum of 2.0 psig.[3]

Specification 15.3.6.B.1

When containment pressure is not within the limits of the LCO, it must be restored to within these limits within one hour. The required action is necessary to return operation to within the bounds of the containment analysis. The one hour completion time is consistent with the actions of Specification 15.3.6.A.1.a., which requires the containment be restored to operable status within one hour.

Specification 15.3.6.B.2.

If containment pressure cannot be restored to within limits within the required completion time, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least hot shutdown within six hours and to cold shutdown within 36 hours of entering 15.3.6.B.2. The allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Specifications 15.3.6.C. and D.

The shutdown conditions of the reactor are selected based on the type of activities that are being carried out. When the reactor head is not to be removed, the specified cold shutdown margin of 1% Δk/k precludes criticality under any occurrence. During refueling the reactor is subcritical by 5% Δk/k. Positive reactivity changes for the purpose of rod assembly testing will not result in criticality because no control bank worth exceeds 3%. Positive reactivity changes by boron dilution may be required or small concentration fluctuations may occur during preparation for, recovery from, or during refueling but maintaining the boron concentration greater than 1800 ppm precludes criticality under these circumstances. 1800 ppm is a nominal value that ensures 5% shutdown for typical reload cores. Should continuous dilution occur, the time intervals for this incident are discussed in Section 14.1.5 of the FSAR.

~~Regarding internal pressure limitations, the containment design pressure of 60 psig would not be exceeded if the internal pressure before a major loss of coolant accident were as much as 6 psig.[1] The containment is designed to withstand an internal vacuum of 2.0 psig.[2]~~

~~The containment purge supply and exhaust valves are required to be locked closed during plant operations since these valves have not been demonstrated capable of closing from the full open position during a design basis loss of coolant accident. Maintaining these valves locked closed during plant operation ensures that excessive quantities of radioactive materials will not be released via the containment purge system in the event of a design basis loss of coolant accident. The containment purge supply and exhaust valves will be locked closed by providing locking devices on the control board operators for these valves.~~

References

(1) FSAR - Section ~~14.3.4~~ 5.1.1

(2) FSAR - Section ~~5.5.2~~ 14.3.4

(3) FSAR - Section 5.5.2

b. Airlock and equipment door seals, including operating mechanism and penetrations with resilient seals which are part of the containment boundary in the airlock structure.

c. Fuel transfer tube flange seal.

d. The containment purge supply and exhaust valves.

e. Other containment components which require leak repair in order to meet the acceptance criterion for any integrated leakage rate test.

B. Acceptance Criterion

1. The total leakage from items II.A.5 and III.A.3 shall not exceed 0.6 L_a.

a. If at any time it is determined that 0.6 L_a is exceeded, enter the applicable LCO(s) of Section 15.3.6. ~~repairs shall be initiated~~ immediately. ~~After repair, a retest to confirm conformance to the acceptance criterion of II.B. is required.~~

~~b. If repairs are not completed and conformance to the acceptance criterion of II.B. is not demonstrated within 48 hours, the reactor shall be taken to cold shutdown conditions until repairs are effected and the local leakage meets this acceptance criterion.~~

2. The leakage from the airlock doors seal test, resulting from the 3 day testing requirement in II.C.1.d, shall be considered acceptable if the leakage sum from the worst door in each airlock, extrapolated to P_a, and added to the total of items II.A.5 and III.A.3, is less than 0.6 L_a.

a. If the total identified in II.B.2, above, exceeds 0.6 L_a, then the airlock containing the worst door shall be full pressure tested to determine the actual leakage performance.

3. The leakage rate for the containment purge supply and exhaust valves shall be compared to the previously measured leakage rate to detect excessive valve degradation.

3. Local leakage shall be measured for containment isolation valves that:

   a. Provide a direct connection between the inside and outside atmospheres of the primary reactor containment under normal operation.
   b. Are required to close automatically upon receipt of a containment isolation signal.
   c. Are required to operate intermittently under post-accident conditions.

B. Acceptance Criterion

1. The total leakage from items II.A.5 and III.A.3 shall not exceed 0.6 L_a.

~~C. Corrective Action~~

~~1.~~ a. If at any time it is determined that 0.6 L_a is exceeded, enter the applicable LCO(s) of Section 15.3.6. ~~repairs shall be initiated~~ immediately. ~~After repair, a retest to confirm conformance to the acceptance criterion of III.B is required.~~

~~2. If repairs are not completed and conformance to the acceptance criterion of III.B is not demonstrated within 48 hours, the reactor shall be taken to cold shutdown conditions until repairs are effected and the local leakage meets this acceptance criterion.~~

~~D.~~C. Test Frequency

1. The above tests of the isolation valves shall be conducted during each shutdown for major fuel reloading but in no case at intervals greater than two years.