TSTF
TECHNICAL SPECIFICATIONS TASK FORCE
A JOINT OWNERS GROUP ACTIVITY

October 30, 2014

TSTF-14-18
PROJ0753

Attn: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Transmittal of TSTF-551, Revision 0, "Address Transient Secondary Containment Conditions"

Enclosed for NRC review is Revision 0 of TSTF-551, "Address Transient Secondary Containment Conditions." TSTF-551 is applicable to Boiling Water Reactor plants.

The TSTF requests that the NRC bill the Boiling Water Reactor Owners' Group for the review of this Traveler.

Should you have any questions, please do not hesitate to contact us.

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Enclosure

cc: Michelle Honcharik, Licensing Processes Branch, NRC
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PWROG
PWR Owners Group

BWR
OWNERS' GROUP

Technical Specifications Task Force
Improved Standard Technical Specifications Change Traveler

Address Transient Secondary Containment Conditions

NUREGs Affected: ☐ 1430 ☐ 1431 ☐ 1432 ☑ 1433 ☑ 1434

Classification: 1) Technical Change

Recommended for CLIIP?: Yes

Correction or Improvement: Improvement

NRC Fee Status: Exemption Requested

Changes Marked on ISTS Rev: 4.0

See attached.

Revision History

OG Revision 0 Revision Status: Active

Revision Proposed by:

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 29-Jul-14

Owners Group Comments
Three rounds of review and comment.

Owners Group Resolution: Approved Date: 23-Oct-14

TSTF Review Information

TSTF Received Date: 24-Oct-14 Date Distributed for Review 24-Oct-14

OG Review Completed: ☐ BWOG ☐ WOG ☐ CEOG ☐ BWROG

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 29-Oct-14

NRC Review Information

NRC Received Date: 30-Oct-14

Revision Proposed by: BWROG LC

Revision Description:
Original Issue

OG Revision 0 **Revision Status: Active**

Owners Group Review Information

Date Originated by OG: 29-Jul-14

Owners Group Comments
(No Comments)

Owners Group Resolution: Date:

Affected Technical Specifications

LCO 3.6.4.1	Secondary Containment Change Description: LCO Note	
LCO 3.6.4.1 Bases	Secondary Containment Change Description: LCO Note	
SR 3.6.4.1.1	Secondary Containment	
SR 3.6.4.1.1 Bases	Secondary Containment	
SR 3.6.4.1.2 Bases	Secondary Containment	
SR 3.6.4.1.5	Secondary Containment	
SR 3.6.4.1.5 Bases	Secondary Containment	
SR 3.6.4.1.3	Secondary Containment	NUREG(s)- 1433 Only
SR 3.6.4.1.3 Bases	Secondary Containment	

1. SUMMARY DESCRIPTION

The proposed change revises Technical Specification (TS) 3.6.4.1, "Secondary Containment," in the Boiling Water Reactor (BWR) Improved Standard Technical Specifications (ISTS). A Note is added to Limiting Condition for Operation (LCO) 3.6.4.1 which allows the [secondary][1] containment boundary to be opened intermittently under administrative control. Surveillance Requirement (SR) 3.6.4.1.1 and SR 3.6.4.1.5 are revised to allow transients during which the [secondary] containment vacuum limit may not be met. In addition, BWR/4 ISTS (Reference 1) SR 3.6.4.1.3 is modified to be consistent with the similar SR in the BWR/6 ISTS (Reference 2) by acknowledging that [secondary] inner and outer containment access openings may be simultaneously open for entry and exit.

2. DETAILED DESCRIPTION

The proposed change addresses issues related to the [secondary] containment pressure and access openings. The [secondary] containment is a single system that performs a safety function. There is no redundant train or system that can perform the [secondary] containment function should the [secondary] containment be inoperable. The Actions of TS 3.6.4.1 provide a 4 hour Completion Time to restore an inoperable [secondary] containment to Operable status. As stated in the ISTS Bases, " The 4 hour Completion Time provides a period of time to correct the problem that is commensurate with the importance of maintaining [secondary] containment during MODES 1, 2, and 3. This time period also ensures that the probability of an accident (requiring [secondary] containment OPERABILITY) occurring during periods where [secondary] containment is inoperable is minimal."

NUREG-1022, Revision 3, "Event Report Guidelines 10 CFR 50.72 and 50.73," discusses the reporting criteria contained in the Code of Federal Regulations (CFR), Title 10, Paragraphs 50.72 and 50.73. The discussion of 50.72(b)(3)(v) and 50.73(a)(2)(v), "Any event or condition that could have prevented the fulfillment of the safety function," states, "There are a limited number of single-train systems that perform safety functions (e.g., the HPCI system in BWRs). For such systems, inoperability of the single train is reportable even though the plant TS may allow such a condition to exist for a limited time." Under this guidance, failure to meet the [secondary] containment LCO or SRs for any period time, even for a brief period much less than the 4 hour Completion Time, requires declaring the [secondary] containment inoperable and, therefore, reporting the condition under 10 CFR 50.72 and 10 CFR 50.73. This reporting requirement has resulted in dozens of Licensee Event Reports (LERs) in the last several years even though in the vast majority of cases the [secondary] containment was restored to Operable status quickly (i.e., much less than the 4 hour Completion Time) and the

[1] Plants of BWR/4 design have differing names for the secondary containment. As a result, the BWR/4 ISTS uses the convention, "[secondary] containment." In the ISTS, brackets indicate plant-specific information. Some BWR/6 plants have differing names for secondary containment, or the primary containment serves a similar function. The BWR/6 ISTS uses the convention "[secondary containment]." In this discussion, the phrase "[secondary] containment" is used for both BWR/4 and BWR/6 plants.

[secondary] containment continued to be capable of performing its safety function. These reports are an unwarranted use of licensee and NRC resources, given that in the majority of cases the safety function of the [secondary] containment is maintained.

To address this situation, the following changes are proposed:

Proposed LCO 3.6.4.1 Note: The LCO requires the [secondary] containment to be Operable and the LCO Bases state, "For the [secondary] containment to be considered OPERABLE, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained." However, there are legitimate reasons to open the [secondary] containment boundary, such as testing and maintenance, or the movement of large equipment. An LCO Note is proposed which allows the [secondary] containment boundary to be opened intermittently under administrative control. This Note will allow intermittent opening of the [secondary] containment barrier without declaring the [secondary] containment inoperable with the attendant reporting requirements.

Proposed SR 3.6.4.1.1 Note: SR 3.6.4.1.1 requires the [secondary] containment to be greater than a required vacuum limit at all times. However, it is possible for the [secondary] containment pressure to be momentarily less than the required vacuum for a number of reasons, such as during entry and exit from the [secondary] containment with both the inner and outer doors open simultaneously, during high winds, and during maintenance, testing, or swapping of the normal ventilation subsystems. These conditions do not affect the ability of the SGT System to establish and maintain the required vacuum in the [secondary] containment as assumed in the accident analyses. However, should [secondary] pressure not meet the SR 3.6.4.1.1 vacuum requirement (however briefly), the [secondary] containment must be declared inoperable and the event reported under 10 CFR 50.72 and 50.73. To address this situation, a Note is added to SR 3.6.4.1.1 which states, "Not required to be met during transient conditions if the Standby Gas Treatment System remains capable of establishing the required [secondary] containment vacuum." This Note allows brief transients below the required vacuum limit without declaring the [secondary] containment inoperable with the attendant reporting requirements.

Proposed SR 3.6.4.1.5 Note: SR 3.6.4.1.5 requires verification that one SGT subsystem can maintain the [secondary] containment pressure $\geq$ 0.25 inch of vacuum water gauge for one hour. It is possible for the [secondary] containment pressure to be momentarily less than the required vacuum during the test for a number of reasons, such as entry and exit from the [secondary] containment with both the inner and outer doors open simultaneously, high winds, or during maintenance, testing, or swapping of the normal ventilation subsystems. These conditions do not affect the ability of the SGT System to establish and maintain the required vacuum in the [secondary] containment as assumed in the accident analyses. Therefore, a Note is proposed to be added to SR 3.6.4.1.4 which states, "Momentary transients less than the required vacuum do not invalidate this test." This Note allows momentary transients below the required vacuum limit without declaring the [secondary] containment inoperable with the attendant reporting requirements.

Proposed BWR/4 SR 3.6.4.1.3 Revision: Another issue being addressed is unintentional, simultaneous opening of both an inner and outer [secondary] containment access opening door. While some plants have interlocks to prevent opening both an inner and outer door, the interlocks may not be effective depending on the timing of the openings, and the use of multiple inner or outer doors for a particular access opening. Under the BWR/4 ISTS, opening both an inner and outer door in an access opening at the same time would result in failure to meet SR 3.6.4.1.3, which requires one access door in each access opening to be closed. This situation requires declaring the [secondary] containment inoperable with the attendant reporting requirements. The BWR/6 ISTS SR 3.6.4.1.3 contains an exception for both doors in an access opening to be open simultaneously for normal entry and exit, but the BWR/4 SR does not. The proposed change adds the BWR/6 exception to the BWR/4 SR.

Proposed Bases Revision: The ISTS SR 3.6.4.1.1 Bases are revised to correctly describe the intended purpose of the SR and to add a Reviewer's Note that explains why the SR in the ISTS is marked as plant-specific. The current combined Bases for SR 3.6.4.1.2 and SR 3.6.4.1.3 are separated and the Bases of SR 3.6.4.1.3 are revised to be consistent with the proposed revised SR.

A model application is included. The model may be used by licensees desiring to adopt this change following NRC approval.

3. TECHNICAL EVALUATION

The [secondary] containment is a structure that completely encloses the primary containment and those components that may contain primary system fluid. It is possible for the [secondary] containment pressure to rise relative to the environmental pressure. To prevent ground level exfiltration of radioactive material while allowing the [secondary] containment to be designed as a conventional structure, the [secondary] containment requires support systems to maintain the control volume pressure at less than atmospheric pressure. During normal operation, non-accident systems are used to maintain the [secondary] containment at a negative pressure. SR 3.6.4.1.1 requires the [secondary] containment to be $\geq$ [0.25] inch of vacuum water gauge when the [secondary] containment is required to be Operable (Modes 1, 2, and 3). SR 3.6.4.1.4 requires verification that the [secondary] containment can be drawn down to be $\geq$ [0.25] inch of vacuum water gauge in $\leq$ [120] seconds using one standby gas treatment (SGT) subsystem. SR 3.6.4.1.5 requires verification that the [secondary] containment can be maintained $\geq$ [0.25] inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate $\leq$ [4000] cfm. Following an accident, the SGT System ensures the [secondary] containment pressure is less than the external atmospheric pressure.

The [secondary] containment boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations and equipment that physically form the [secondary] containment. A [secondary] containment access opening contains at least one inner and one outer door. In some cases, [secondary] containment access openings are shared such that there are multiple inner or outer doors. All [secondary] containment access doors are

normally kept closed, except when the access opening is being used for entry and exit of personnel or equipment.

The safety function of the [secondary] containment is to contain, dilute, and hold up fission products that may leak from primary containment following a Design Basis Accident (DBA) to ensure the control room operator and offsite doses are within the regulatory and NRC-approved limits. In conjunction with operation of the SGT System and closure of certain valves whose lines penetrate the [secondary] containment, the [secondary] containment is designed to reduce the activity level of the fission products that bypass or leak from primary containment, or are released from the reactor coolant pressure boundary components located in [secondary] containment prior to release to the environment. For the [secondary] containment to be considered Operable, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained by a single subsystem the SGT System, when that system is in operation.

The [secondary] containment vacuum requirements (which demonstrate leak-tightness) and the SGT System together ensure radioactive material is contained. As long as a SGT subsystem can draw the required vacuum on the [secondary] containment when needed (as demonstrated by SR 3.6.4.1.4 or SR 3.6.4.1.5), the [secondary] containment can perform its safety function.

Transients in [secondary] containment pressure may occur that do not affect the ability of the [secondary] containment to be able to perform its safety function. Examples are:

- The simultaneous opening of both an inner and outer door in an access opening does not satisfy the current BWR/4 ISTS SR 3.6.4.1.3 and may result in a temporary decrease in building vacuum below the SR limit. However, once one door is closed, the SR is met and the vacuum can be reestablished.

- High winds lower external pressure, which could result in a differential pressure less than the SR limit. However, such winds also increase the dilution of any radioactive releases and the differential pressure returns to within the SR limit when wind speed drops.

- Maintenance or testing could result in temporary opening of doors, valves, systems, maintenance hatches, floor plugs, etc., or opening of doors or hatches to facilitate movement of equipment could result in not meeting SR 3.6.4.1.1 and a loss of the required vacuum. As long as the breaches are controlled administratively and can be promptly closed, the [secondary] containment boundary can be made intact, and the SGT System remains capable to establishing the necessary vacuum.

- Loss of the normal, non-emergency ventilation system that maintains the [secondary] containment vacuum, due to equipment failure or swapping of operating equipment. This loss of vacuum does not affect [secondary] containment boundary, the non-emergency ventilation system is not assumed to operate during an accident, and the SGT System remains capable to establishing the necessary vacuum in the event of an accident.

In these and similar cases, the [secondary] containment remains capable of containing fission products that may leak from primary containment following a DBA, which will ensure the control room operator and offsite doses are within the regulatory and NRC-approved limits.

Additionally, for many BWR plants that have adopted an alternative source term in accordance with 10 CFR 50.67, "Accident source term," using the methodology described in NRC Regulatory Guide 1.183, no activity releases are assumed to occur for the first two minutes following initiation of the loss of coolant accident (LOCA). This further supports a conclusion that a temporary loss of [secondary] containment vacuum does not constitute a loss of safety function.

As discussed in Section 2, the reporting requirements in 10 CFR 50.72 and 50.73 require prompt notification and submittal of an LER whenever the [secondary] containment is inoperable, regardless of the length of time of the inoperability or whether [secondary] containment could still fulfill its safety function. To address this situation, the following changes are proposed which will allow the [secondary] containment to be Operable during brief, controlled circumstances which currently would require declaring the [secondary] containment inoperable.

Proposed LCO 3.6.4.1 Note

LCO 3.6.4.1 requires the [secondary] containment to be Operable and the LCO Bases state, "For the [secondary] containment to be considered OPERABLE, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained." However, there are sometimes reasons to open the [secondary] containment boundary, such as testing and maintenance, or the movement of large equipment. An LCO Note is proposed which allows the [secondary] containment boundary to be opened intermittently under administrative control

The allowance to open a barrier under administrative control appears in the ISTS in several locations, such as the control room boundary and primary containment isolation valves. The administrative controls ensure the opening will be promptly closed if required. Consistent with the existing allowances, the acceptable administrative controls are described in the Bases in a manner similar to the control room boundary and primary containment isolation valve administrative control allowances. The proposed Bases state:

> This Note only applies to openings in the [secondary] containment that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. These controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the opening and to restore the [secondary] containment boundary to a condition equivalent to the design condition when a need for [secondary] containment isolation is indicated.

The ability to open [secondary] containment access openings under administrative control, even if it means the [secondary] containment boundary is temporarily not intact, is acceptable due to the low probability of an event that could pressurize the [secondary] containment during the short time in which the [secondary] containment is open and the presence of administrative controls to rapidly close the opening. The risk to the public from this allowance is less than the risk associated with the current 4 hour Completion Time to restore an inoperable [secondary] containment, because the LCO Note requires administrative controls to be able to rapidly restore the [secondary] containment to Operable status.

Proposed SR 3.6.4.1.1 Note

As discussed above, the [secondary] containment pressure is required to be greater than the required vacuum at all times. To address situations in which SR 3.6.4.1.1 may not be met due to transient conditions, a Note is proposed. The Note states:

> Not required to be met during transient conditions if the Standby Gas Treatment System remains capable of establishing the required [secondary] containment vacuum.

Transient conditions in which [secondary] containment pressure may be less than the required containment vacuum may occur in many situations, such as, but not limited to, entry and exit from the [secondary] containment, high winds, maintenance or testing of the [secondary] containment, and failure or change of operating normal ventilation subsystems. As discussed above, [secondary] containment Operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. Transient conditions which do not affect the ability of the [secondary] containment to perform this function should not result in failure to meet the SR. As stated in 10 CFR 50.36(c)(3), the purpose of an SR is to verify the LCO is met, and LCO 3.6.4.1 requires the [secondary] containment to be Operable. If a transient condition does not affect the ability of the SGT System to establish the required vacuum, the [secondary] containment is Operable and the SR should be considered met.

Proposed SR 3.6.4.1.5 Note

SR 3.6.4.1.5 requires [secondary] containment pressure to be maintained greater than the vacuum limit for 1 hour using one SGT subsystem. A Note to the SR is proposed which states:

> Momentary transients less than the required vacuum do not invalidate this test.

The Note is similar to Notes in SR 3.8.1.3, SR 3.8.1.14, and SR 3.8.1.15, which state, "Momentary transients outside the load range do not invalidate this test." Similar to the performance of these Diesel Generator tests, momentary transients outside of the required [secondary] containment pressure may occur during the test due to, for example, entry and exit from the [secondary] containment and high winds, and are not indicative of an inability of the SGT System to establish the post-accident [secondary] containment

vacuum. The proposed Note addresses these situations while ensuring the [secondary] containment pressure can be established and maintained.

SR 3.6.4.1.4 requires verification that one SGT subsystem can draw down the [secondary] containment to ≥ 0.25 inch of vacuum water gauge in ≤ [120] seconds. A Note is not proposed for this SR because it's unlikely a pressure transient would occur during the short time required for performance of a successful verification.

Proposed BWR/4 SR 3.6.4.1.3 Revision

The BWR/4 SR 3.6.4.1.3 is proposed to be revised to be the same as the BWR/6 SR 3.6.4.1.4. The text in italics, below, is added.

> Verify one [secondary] containment access door in each access opening is closed*, except when the access opening is being used for entry and exit*.

Some plants have interlocks to prevent opening both an inner and outer door simultaneously during entry and exit, but the interlocks may not be effective depending on the timing of the openings, and the use of multiple inner or outer doors for a particular access opening. The BWR/6 ISTS SR 3.6.4.1.3 contains an exception for both doors in an access opening being opened simultaneously for normal entry and exit, but the BWR/4 SR does not. This allowance is reasonable because the doors will be closed following entry or exit, restoring the [secondary] containment boundary.

Proposed Bases Revisions

The ISTS SR 3.6.4.1.1 Bases are modified to state:

> This SR ensures that the [secondary] containment ~~boundary is sufficiently leak-tight to preclude exfiltration under expected wind conditions~~ *pressure is within the accident analyses assumptions*.

The existing Bases statement that the SR acceptance criteria is intended to preclude exfiltration under expected wind conditions is not correct. As discussed above, high winds can result in temporary failure to meet the acceptance criteria. More importantly, wind conditions are not a primary consideration in establishing the SR limit. The SR acceptance criteria is an assumption in the accident analysis performance requirements for the SGT System. As discussed above, high winds also increase the dilution of any radioactive releases from the [secondary] containment, resulting in decreases in offsite and control room dose. The Bases are revised to improve this discussion.

A change is made to the ISTS Bases of SR 3.6.4.1.1 to add a Reviewer's Note. ISTS SR 3.6.4.1.1 is currently enclosed in brackets, which indicates the SR is not applicable to all plants. However, the ISTS provides no guidance on when this SR should be included in plant-specific TS. The proposed Reviewer's Note states, "SR 3.6.4.1.1 should be included if the accident analyses assume the [secondary] containment pressure is less than a certain value at the initiation of an accident." Note that this change is only made

to the ISTS and does not appear in plant-specific TS. If the accident analyses do not assume an initial condition for [secondary] containment pressure, the SR is not needed to ensure the accident analyses initial conditions are met.

The current combined Bases for SR 3.6.4.1.2 and SR 3.6.4.1.3 are separated and the Bases of SR 3.6.4.1.3 are revised to be consistent with the proposed revised SR.

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The following regulatory requirements have been considered:

- Title 10 of the Code of Federal Regulations (10 CFR), Section 50.36, "Technical specifications," in which the Commission established its regulatory requirements related to the contents of the TS. Specifically, 10 CFR 50.36(c)(2) states, in part, "Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility." 10 CFR 50.36(c)(3) states, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions of operation will be met."

The proposed changes to the [secondary] containment LCO and SRs do not affect compliance with these regulations.

The applicable 10 CFR Part 50, Appendix A, General Design Criteria, was considered as follows:

- Criterion 16 -Containment Design. Reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.

The proposed does not alter the design of the [secondary] containment or its ability to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity.

4.2 No Significant Hazards Determination

Note: the No Significant Hazards Determination given below is to support the adoption of the proposed Technical Specifications changes by plant-specific license amendment. Therefore, the ISTS SR 3.6.4.1.1 Reviewer's Note addition and other Bases changes are not discussed. Discussion of the BWR/4-specific change to SR 3.6.4.1.3 is bracketed because it is not applicable to all licensees.

The proposed change revises Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.4.1, "Secondary Containment," and Surveillance Requirement

(SR) 3.6.4.1.1 and SR 3.6.4.1.5. The LCO is modified to add a Note which allows the [secondary] containment boundary to be opened intermittently under administrative control. The SRs are revised to allow transients during which the [secondary] containment may not meet the SR acceptance criteria. [In addition, SR 3.6.4.1.3 is modified to acknowledge that [secondary] containment access openings may be open for entry and exit.]

The proposed change has been evaluated against the criteria of 10 CFR 50.92(c) to determine if the proposed change results in any significant hazards. The following is the evaluation of each of the 10 CFR 50.92(c) criteria:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed changes allow temporary conditions during which the [secondary] containment LCO and SRs are not met. The [secondary] containment is not an initiator of any accident previously evaluated. As a result, the probability of any accident previously evaluated is not increased. The consequences of an accident previously evaluated while utilizing the proposed changes are no different than the consequences of an accident while utilizing the existing four hour Completion Time for an inoperable [secondary] containment. As a result, the consequences of an accident previously evaluated are not significantly increased.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any previously evaluated?

   Response: No

   The proposed change does not alter the protection system design, create new failure modes, or change any modes of operation. The proposed change does not involve a physical alteration of the plant; and no new or different kind of equipment will be installed. Consequently, there are no new initiators that could result in a new or different kind of accident.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No

   The proposed changes allow temporary conditions during which the [secondary] containment LCO and SRs are not met. Temporary conditions in which the

[secondary] containment vacuum is below the required pressure are acceptable provided the conditions do not affect the ability of the Standby Gas Treatment System to create a lower pressure in the [secondary] containment than in the outside environment if required. This condition is incorporated in the proposed change by requiring the condition to be momentary or under administrative control such that the conditions equivalent to the design condition can be quickly restored should [secondary] containment vacuum be required. Therefore, the safety function of the [secondary] containment is not affected. [The allowance for both an inner and outer [secondary] containment door to be open simultaneously for entry and exit does not affect the safety function of the [secondary] containment as the doors are promptly closed after entry or exit, thereby restoring the [secondary] containment boundary.]

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the evaluation provided herein, the industry has determined that operation of the facility in accordance with the proposed change does not involve a significant hazards as defined in 10 CFR 50.92(c), in that it does not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

4.3 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5. ENVIRONMENTAL CONSIDERATION

Evaluation of the proposed change has determined that the change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

6. REFERENCES

1. NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4," Revision 4.

2. NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6," Revision 4.

Model Application

[DATE] 10 CFR 50.90

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: PLANT NAME
DOCKET NO. 50-[xxx]
Application to Revise Technical Specifications to Adopt TSTF-551, "Address Transient Secondary Containment Conditions"

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, [LICENSEE] is submitting a request for an amendment to the Technical Specifications (TS) for [PLANT NAME, UNIT NOS.].

The proposed change revises TS Limiting Condition for Operation (LCO) 3.6.4.1, "Secondary Containment," and Surveillance Requirement (SR) 3.6.4.1.1 and SR 3.6.4.1.5. The LCO is modified to add a Note which allows the [secondary] containment boundary to be opened intermittently under administrative control. The SRs are revised to allow transients during which the [secondary] containment pressure may not meet the SR pressure requirements. [In addition, SR 3.6.4.1.3 is modified to acknowledge that [secondary] containment access openings may be open for entry and exit.]

Attachment 1 provides a description and assessment of the proposed changes. Attachment 2 provides the existing TS pages marked up to show the proposed changes. Attachment 3 provides revised (clean) TS pages. Attachment 4 provides TS Bases pages marked up to show the associated TS Bases changes and is provided for information only.

Approval of the proposed amendment is requested by [date]. Once approved, the amendment shall be implemented within [ ] days.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated [STATE] Official.

[In accordance with 10 CFR 50.30(b), a license amendment request must be executed in a signed original under oath or affirmation. This can be accomplished by attaching a notarized affidavit confirming the signature authority of the signatory, or by including the following statement in the cover letter: "I declare under penalty of perjury that the foregoing is true and correct. Executed on (date)." The alternative statement is pursuant to 28 USC 1746. It does not require notarization.]

If you should have any questions regarding this submittal, please contact [NAME, TELEPHONE NUMBER].

Sincerely,

[Name, Title]

Attachments:
1. Description and Assessment
2. Proposed Technical Specification Changes (Mark-Up)
3. Revised Technical Specification Pages
4. Proposed Technical Specification Bases Changes (Mark-Up) – Information Only

cc: NRC Project Manager
NRC Regional Office
NRC Resident Inspector
State Contact

ATTACHMENT 1 - DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

The proposed change revises Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.4.1, "Secondary Containment," and Surveillance Requirement (SR) 3.6.4.1.1 and SR 3.6.4.1.5. The LCO is modified to add a Note which allows the [secondary] containment boundary to be opened intermittently under administrative control. The SRs are revised to allow transients during which the [secondary] containment pressure may not meet the SR pressure requirements. [In addition, SR 3.6.4.1.3 is modified to acknowledge that [secondary] containment access openings may be open for entry and exit.]

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

[LICENSEE] has reviewed the model safety evaluation dated [DATE] as part of the Federal Register Notice of Availability. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-551. [As described herein,] [LICENSEE] has concluded that the justifications presented in TSTF-551 and the model safety evaluation prepared by the NRC staff are applicable to [PLANT, UNIT NOS.] and justify this amendment for the incorporation of the changes to the [PLANT] TS.

2.2 Optional Changes and Variations

[LICENSEE is not proposing any variations or deviations from the TS changes described in the TSTF-551, or the applicable parts of the NRC staff's model safety evaluation dated [DATE].] [LICENSEE is proposing the following variations from the TS changes described in the TSTF-551, Revision 0, or the applicable parts of the NRC staff's model safety evaluation dated [DATE].]

[The [PLANT] TS utilize different [numbering][and][titles] than the Standard Technical Specifications on which TSTF-551 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles and the TSTF-551 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-551 to the [PLANT] TS.]

[The Traveler and model Safety Evaluation discuss the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). [PLANT] was not licensed to the 10 CFR 50, Appendix A, GDC. The [PLANT] equivalents of the referenced GDC are [REFERENCE INCLUDING UFSAR LOCATION, IF APPLICABLE]. [DISCUSS THE EQUIVALENCE OF THE REFERENCED PLANT-SPECIFIC REQUIREMENTS TO THE APPENDIX A GDC AS RELATED TO THE PROPOSED CHANGE.] This difference does not alter the conclusion that the proposed change is applicable to [PLANT].]

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

[LICENSEE] requests adoption of TSTF-551, "Address Transient Secondary Containment Conditions," which is an approved change to the standard technical specifications (STS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). The proposed change revises Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.4.1, "Secondary Containment," and Surveillance Requirement (SR) 3.6.4.1.1 and SR 3.6.4.1.5. The LCO is modified to add a Note which allows the [secondary] containment boundary to be opened intermittently under administrative control. The SRs are revised to allow transients during which the [secondary] containment may not meet the SR acceptance criteria. [In addition, SR 3.6.4.1.3 is modified to acknowledge that [secondary] containment access openings may be open for entry and exit.]

[LICENSEE] has evaluated the proposed change against the criteria of 10 CFR 50.92(c) to determine if the proposed change results in any significant hazards. The following is the evaluation of each of the 10 CFR 50.92(c) criteria:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed changes allow temporary conditions during which the [secondary] containment LCO and SRs are not met. The [secondary] containment is not an initiator of any accident previously evaluated. As a result, the probability of any accident previously evaluated is not increased. The consequences of an accident previously evaluated while utilizing the proposed changes are no different than the consequences of an accident while utilizing the existing four hour Completion Time for an inoperable [secondary] containment. As a result, the consequences of an accident previously evaluated are not significantly increased.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any previously evaluated?

   Response: No

   The proposed change does not alter the protection system design, create new failure modes, or change any modes of operation. The proposed change does not involve a physical alteration of the plant; and no new or different kind of equipment will be installed. Consequently, there are no new initiators that could result in a new or different kind of accident.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed changes allow temporary conditions during which the [secondary] containment LCO and SRs are not met. Temporary conditions in which the [secondary] containment vacuum is below the required pressure are acceptable provided the conditions do not affect the ability of the Standby Gas Treatment System to create a lower pressure in the [secondary] containment than in the outside environment if required. This condition is incorporated in the proposed change by requiring the condition to be momentary or under administrative control such that the conditions equivalent to the design condition can be quickly restored should [secondary] containment vacuum be required. Therefore, the safety function of the [secondary] containment is not affected. [The allowance for both an inner and outer [secondary] containment door to be open simultaneously for entry and exit does not affect the safety function of the [secondary] containment as the doors are promptly closed after entry or exit, thereby restoring the [secondary] containment boundary.]

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, [LICENSEE] concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

3.2 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

4.0 ENVIRONMENTAL EVALUATION

The proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

3.6 CONTAINMENT SYSTEMS

3.6.4.1 [Secondary] Containment

LCO 3.6.4.1 The [secondary] containment shall be OPERABLE.

----------NOTE----------
The [secondary] containment boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, and 3,
During movement of [recently] irradiated fuel assemblies in the [secondary] containment,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. [Secondary] containment inoperable in MODE 1, 2, or 3.	A.1	Restore [secondary] containment to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. --- Be in MODE 3.	12 hours
C. [Secondary] containment inoperable during movement of [recently] irradiated fuel assemblies in the [secondary] containment or during OPDRVs.	C.1	----------NOTE---------- LCO 3.0.3 is not applicable. --- Suspend movement of [recently] irradiated fuel assemblies in the [secondary] containment.	Immediately
	AND		
	C.2	Initiate action to suspend	Immediately

CONDITION	REQUIRED ACTION	COMPLETION TIME
	OPDRVs.	

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	[----------NOTE---------- *Not required to be met during transient conditions if the Standby Gas Treatment System remains capable of establishing the required [secondary] containment vacuum.* ---------- Verify [secondary] containment vacuum is ≥ [0.25] inch of vacuum water gauge.	[24 hours OR In accordance with the Surveillance Frequency Control Program]]
SR 3.6.4.1.2	Verify all [secondary] containment equipment hatches are closed and sealed.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.4.1.3	Verify one [secondary] containment access door in each access opening is closed*, except when the access opening is being used for entry and exit*.	[31 days OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.4	[Verify [secondary] containment can be drawn down to ≥ [0.25] inch of vacuum water gauge in ≤ [120] seconds using one standby gas treatment (SGT) subsystem.	[[18] months on a STAGGERED TEST BASIS for each subsystem OR In accordance with the Surveillance Frequency Control Program]]
SR 3.6.4.1.5	----------*NOTE*---------- *Momentary transients less than the required vacuum do not invalidate this test.* ---------- Verify the [secondary] containment can be maintained ≥ [0.25] inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ [4000] cfm.	[[18] months on a STAGGERED TEST BASIS for each SGT subsystem OR In accordance with the Surveillance Frequency Control Program]

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4.1 [Secondary] Containment

BASES

BACKGROUND

The function of the [secondary] containment is to contain, dilute, and hold up fission products that may leak from primary containment following a Design Basis Accident (DBA). In conjunction with operation of the Standby Gas Treatment (SGT) System and closure of certain valves whose lines penetrate the [secondary] containment, the [secondary] containment is designed to reduce the activity level of the fission products prior to release to the environment and to isolate and contain fission products that are released during certain operations that take place inside primary containment, when primary containment is not required to be OPERABLE, or that take place outside primary containment.

The [secondary] containment is a structure that completely encloses the primary containment and those components that may be postulated to contain primary system fluid. This structure forms a control volume that serves to hold up and dilute the fission products. It is possible for the pressure in the control volume to rise relative to the environmental pressure (e.g., due to pump and motor heat load additions). To prevent ground level exfiltration while allowing the [secondary] containment to be designed as a conventional structure, the [secondary] containment requires support systems to maintain the control volume pressure at less than the external pressure. Requirements for these systems are specified separately in LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)," and LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABLE SAFETY ANALYSES

There are two principal accidents for which credit is taken for [secondary] containment OPERABILITY. These are a loss of coolant accident (LOCA) (Ref. 1) and a fuel handling accident [involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)] inside [secondary] containment (Ref. 2). The [secondary] containment performs no active function in response to each of these limiting events; however, its leak tightness is required to ensure that the release of radioactive materials from the primary containment is restricted to those leakage paths and associated leakage rates assumed in the accident analysis and that fission products entrapped within the [secondary] containment structure will be treated by the SGT System prior to discharge to the environment.

[Secondary] containment satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO

An OPERABLE [secondary] containment provides a control volume into which fission products that bypass or leak from primary containment, or are released from the reactor coolant pressure boundary components located in [secondary] containment, can be diluted and processed prior to release to the environment. For the [secondary] containment to be considered OPERABLE, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained.

The LCO is modified by a Note which allows the [secondary] containment boundary to be opened intermittently under administrative control. The [secondary] containment boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations and equipment that physically form the [secondary] containment. This Note is not required for [secondary] containment access door entry and exit that is permitted by SR 3.6.4.1.3. This Note only applies to openings in the [secondary] containment that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. These controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the opening and to restore the [secondary] containment boundary to a condition equivalent to the design condition when a need for [secondary] containment isolation is indicated. The ability to open [secondary] containment access openings under administrative control, even if it means the [secondary] containment boundary is temporarily not intact, is acceptable due to the low probability of an event that could pressurize the [secondary] containment during the short time in which the [secondary] containment is open and the presence of administrative controls to rapidly close the opening.

APPLICABILITY

In MODES 1, 2, and 3, a LOCA could lead to a fission product release to primary containment that leaks to [secondary] containment. Therefore, [secondary] containment OPERABILITY is required during the same operating conditions that require primary containment OPERABILITY.

In MODES 4 and 5, the probability and consequences of the LOCA are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining [secondary] containment OPERABLE is not required in MODE 4 or 5 to ensure a control volume, except for other situations for which significant releases of radioactive material can be postulated, such as during operations with a potential for draining the reactor vessel (OPDRVs) or during movement of [recently] irradiated fuel assemblies in the [secondary] containment. [Due to radioactive decay, secondary containment is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days).]

----------REVIEWER'S NOTE----------

The addition of the term "recently" associated with handling irradiated fuel in all of the containment function Technical Specification requirements is only applicable to those licensees who have demonstrated by analysis that after sufficient radioactive decay has occurred, off-site doses resulting from a fuel handling accident remain below the Standard Review Plan limits (well within 10 CFR 100).

Additionally, licensees adding the term "recently" must make the following commitment which is consistent with NUMARC 93-01, Revision 4, Section 11.3.6.5, "Safety Assessment for Removal of Equipment from Service During Shutdown Conditions," subheading "Containment - Secondary (BWR)."

"The following guidelines are included in the assessment of systems removed from service during movement of irradiated fuel:

BASES

APPLICABILITY (continued)

-During fuel handling/core alterations, ventilation system and radiation monitor availability (as defined in NUMARC 91-06) should be assessed, with respect to filtration and monitoring of releases from the fuel. Following shutdown, radioactivity in the fuel decays away fairly rapidly. The basis of the Technical Specification operability amendment is the reduction in doses due to such decay. The goal of maintaining ventilation system and radiation monitor availability is to reduce doses even further below that provided by the natural decay.

-A single normal or contingency method to promptly close primary or secondary containment penetrations should be developed. Such prompt methods need not completely block the penetration or be capable of resisting pressure.

The purpose of the "prompt methods" mentioned above are to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored."

ACTIONS

A.1

If [secondary] containment is inoperable, it must be restored to OPERABLE status within 4 hours. The 4 hour Completion Time provides a period of time to correct the problem that is commensurate with the importance of maintaining [secondary] containment during MODES 1, 2, and 3. This time period also ensures that the probability of an accident (requiring [secondary] containment OPERABILITY) occurring during periods where [secondary] containment is inoperable is minimal.

B.1

----------REVIEWER'S NOTE ----------
Adopt of a MODE 3 end state requires the licensee to make the following commitments:

1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision 3, July 2000.

2. [LICENSEE] will follow the guidance established in TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 2, "Technical Specifications End States, NEDC-32988-A," November 2009.

BASES

ACTIONS (continued)

If [secondary] containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 3), because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action B.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C.1 and C.2

Movement of [recently] irradiated fuel assemblies in the [secondary] containment and OPDRVs can be postulated to cause significant fission product release to the [secondary] containment. In such cases, the [secondary] containment is the only barrier to release of fission products to the environment. Therefore, movement of [recently] irradiated fuel assemblies must be immediately suspended if the [secondary] containment is inoperable.

Suspension of these activities shall not preclude completing an action that involves moving a component to a safe position. Also, action must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

BASES

ACTIONS (continued)

Required Action C.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving [recently] irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving [recently] irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of [recently] irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

[SR 3.6.4.1.1

----------REVIEWER'S NOTE----------
SR 3.6.4.1.1 should be included if the accident analyses assume the [secondary] containment pressure is less than a certain value at the initiation of an accident.
----------]]

This SR ensures that the [secondary] containment *pressure is within the accident analyses assumptions.* ~~boundary is sufficiently leak tight to preclude exfiltration under expected wind conditions.~~

The SR is modified by a Note which states the SR is not required to be met during transient conditions if the Standby Gas Treatment System remains capable of establishing the required [secondary] containment vacuum. Transient conditions in which [secondary] containment pressure may be less than the required containment vacuum may occur in many situations, such as, but not limited to, entry and exit from the [secondary] containment, high winds, maintenance or testing of the [secondary] containment, and failure or change of operating normal ventilation subsystems. These transient conditions are permitted if they do not impair the ability of the Standby Gas Treatment System to establish the post-accident [secondary] containment vacuum assumed in the accident analyses.

[The 24 hour Frequency of this SR was developed based on operating experience related to [secondary] containment vacuum variations during the applicable MODES and the low probability of a DBA occurring between surveillances.

Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal [secondary] containment vacuum condition.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]]

SR 3.6.4.1.2 ~~and SR 3.6.4.1.3~~

Verifying that [secondary] containment equipment hatches ~~and one access door in each access opening~~ are closed ensures that the infiltration of outside air of such a magnitude as to prevent maintaining the desired negative pressure does not occur *and* ~~. Verifying *the equipment hatches* that all such openings are closed~~ provides adequate assurance that exfiltration from the [secondary] containment will not occur. In this application, the term "sealed" has no connotation of leak tightness. ~~Maintaining [secondary] containment OPERABILITY requires verifying one door in the access opening is closed. [An access opening contains one inner and one outer~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~door. In some cases, [secondary] containment access openings are shared such that a [secondary] containment barrier may have multiple inner or multiple outer doors. The intent is to not breach the [secondary] containment at any time when [secondary] containment is required. This is achieved by maintaining the inner or outer portion of the barrier closed at all times.] However, all [secondary] containment access doors are normally kept closed, except when the access opening is being used for entry and exit or when maintenance is being performed on an access opening.~~ [The 31 day Frequency for ~~these~~ *this* SR~~s~~ has been shown to be adequate, based on operating experience, and is considered adequate in view of the other indications of ~~door and~~ hatch status that are available to the operator.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.4.1.3

Verifying that one [secondary] containment access door in each access opening is closed provides adequate assurance that exfiltration from the [secondary] containment will not occur. An access opening contains at least one inner and one outer door. [In some cases, [secondary] containment access openings are shared such that there are multiple inner or outer doors.] The intent is to not breach the [secondary] containment, which is achieved by maintaining the inner or outer portion of the barrier closed except when the access opening is being used for entry and exit.

[The 31 day Frequency for this SR has been shown to be adequate, based on operating experience, and is considered adequate in view of the other indications of door status that are available to the operator.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

[SR 3.6.4.1.4 and] SR 3.6.4.1.5

The SGT System exhausts the [secondary] containment atmosphere to the environment through appropriate treatment equipment. Each SGT subsystem is designed to draw down pressure in the [secondary] containment to ≥[0.25] inches of vacuum water gauge in ≤ [120] seconds and maintain pressure in the [secondary] containment at ≥ [0.266] inches of vacuum water gauge for 1 hour at a flow rate ≤ [4000] cfm. To ensure that all fission products released to the [secondary] containment are treated, [SR 3.6.4.1.4 and] SR 3.6.4.1.5 verify that a pressure in the [secondary] containment that is less than the lowest postulated pressure external to the [secondary] containment boundary can [rapidly] be [established and] maintained. When the SGT System is operating as designed, the establishment and maintenance of [secondary] containment pressure cannot be accomplished if the [secondary] containment boundary is not intact. [Establishment of this pressure is confirmed by SR 3.6.4.1.4, which demonstrates that the [secondary] containment can be drawn down to ≥ [0.25] inches of vacuum water gauge in ≤ [120] seconds using one SGT subsystem.] SR 3.6.4.1.5 demonstrates that the pressure in the [secondary] containment can be maintained ≥ [0.266]

BASES

SURVEILLANCE REQUIREMENTS (continued)

inches of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ [4000] cfm. The 1 hour test period allows [secondary] containment to be in thermal equilibrium at steady state conditions. The primary purpose of these SR[s] is to ensure [secondary] containment boundary integrity. The secondary purpose of these SR[s] is to ensure that the SGT subsystem being tested functions as designed. There is a separate LCO with Surveillance Requirements which serves the primary purpose of ensuring OPERABILITY of the SGT System. The inoperability of the SGT System does not necessarily constitute a failure of these Surveillance[s] relative to the [secondary] containment OPERABILITY.

SR 3.6.4.1.5 is modified by a Note which states that momentary transients less than the required vacuum do not invalidate the test. Momentary conditions during the test in which [secondary] containment pressure is less than the required containment vacuum may occur due to, for example, entry and exit from the [secondary] containment and high winds. These momentary transients are not indicative of an inability of the Standby Gas Treatment System to establish the post-accident [secondary] containment vacuum.

[These SR[s] need not be performed with each SGT subsystem. The SGT subsystem used for these Surveillance[s] is staggered to ensure that in addition to the requirements of LCO 3.6.4.3, either SGT subsystem will perform this test. Operating experience has shown the [secondary] containment boundary usually passes these Surveillance[s] when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

REFERENCES

1. FSAR, Section [15.1.39].

2. FSAR, Section [15.1.41].

3. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

3.6 CONTAINMENT SYSTEMS

3.6.4.1 [Secondary Containment]

LCO 3.6.4.1 The [secondary containment] shall be OPERABLE.

----------NOTE----------
The [secondary containment] boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, and 3,
[During movement of [recently] irradiated fuel assemblies in the [primary or secondary containment],
During operations with a potential for draining the reactor vessel (OPDRVs).]

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. [Secondary containment] inoperable [in MODE 1, 2, or 3].	A.1 Restore [secondary containment] to OPERABLE status.	4 hours
B. Required Action and associated Completion Time [of Condition A] not met.	B.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
C. [[Secondary containment] inoperable during movement of [recently] irradiated fuel assemblies in the [primary or secondary containment] or during OPDRVs.	C.1 ----------NOTE---------- LCO 3.0.3 is not applicable. ---------- Suspend movement of [recently] irradiated fuel assemblies in the [primary and secondary containment]. AND	Immediately

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2 Initiate action to suspend OPDRVs.	Immediately]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	[----------NOTE---------- *Not required to be met during transient conditions if the Standby Gas Treatment System remains capable of establishing the required [secondary containment] vacuum.* ---------- Verify [secondary containment] vacuum is ≥ [0.25] inch of vacuum water gauge.	[24 hours OR In accordance with the Surveillance Frequency Control Program]]
SR 3.6.4.1.2	Verify all [secondary containment] equipment hatches are closed and sealed.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.4.1.3	Verify one [secondary containment] access door in each access opening is closed, except when the access opening is being used for entry and exit.	[31 days OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.4	[Verify the [secondary containment] can be drawn down to ≥ [0.25] inch of vacuum water gauge in ≤ [120] seconds using one standby gas treatment (SGT) subsystem.	[[18] months on a STAGGERED TEST BASIS for each SGT subsystem OR In accordance with the Surveillance Frequency Control Program]]
SR 3.6.4.1.5	----------NOTE---------- *Momentary transients less than the required vacuum do not invalidate this test.* ---------- Verify the [secondary containment] can be maintained ≥ [0.266] inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ [4000] cfm.	[[18] months on a STAGGERED TEST BASIS for each SGT subsystem OR In accordance with the Surveillance Frequency Control Program]

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4.1 [Secondary Containment]

BASES

BACKGROUND

The function of the [secondary containment] is to contain, dilute, and hold up fission products that may leak from primary containment following a Design Basis Accident (DBA). In conjunction with operation of the Standby Gas Treatment (SGT) System and closure of certain valves whose lines penetrate the [secondary containment], the [secondary containment] is designed to reduce the activity level of the fission products prior to release to the environment and to isolate and contain fission products that are released during certain operations that take place inside primary containment, when primary containment is not required to be OPERABLE, or that take place outside primary containment.

The [secondary containment] is a structure that completely encloses the primary containment and those components that may be postulated to contain primary system fluid. This structure forms a control volume that serves to hold up and dilute the fission products. It is possible for the pressure in the control volume to rise relative to the environmental pressure (e.g., due to pump/motor heat load additions). To prevent ground level exfiltration while allowing the [secondary containment] to be designed as a conventional structure, the [secondary containment] requires support systems to maintain the control volume pressure at less than the external pressure. Requirements for these systems are specified separately in LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)," and LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABLE SAFETY ANALYSES

There are three principal accidents for which credit is taken for [secondary containment] OPERABILITY. These are a LOCA (Ref. 1), a fuel handling accident [involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)] inside primary containment (Ref. 2), and a fuel handling accident [involving handling recently irradiated fuel] in the auxiliary building (Ref. 3). The [secondary containment] performs no active function in response to each of these limiting events; however, its leak tightness is required to ensure that the release of radioactive materials from the primary containment is restricted to those leakage paths and associated leakage rates assumed in the accident analysis, and that fission products entrapped within the [secondary containment] structure will be treated by the SGT System prior to discharge to the environment.

[Secondary containment] satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO

An OPERABLE [secondary containment] provides a control volume into which fission products that bypass or leak from primary containment, or are released from the reactor coolant pressure boundary components located in [secondary containment], can be diluted and processed prior to release to the environment. For the [secondary containment] to be considered OPERABLE, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained.

The LCO is modified by a Note which allows the [secondary containment] boundary to be opened intermittently under administrative control. The [secondary containment] boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations and equipment that physically form the [secondary containment]. This Note is not required for [secondary containment] access door entry and exit that is permitted by SR 3.6.4.1.3. This Note only applies to openings in the [secondary containment] that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. These controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the opening and to restore the [secondary containment] boundary to a condition equivalent to the design condition when a need for [secondary containment] isolation is indicated. The ability to open [secondary containment] access openings under administrative control, even if it means the [secondary containment] boundary is temporarily not intact, is acceptable due to the low probability of an event that could pressurize the [secondary containment] during the short time in which the [secondary containment] is open and the presence of administrative controls to rapidly close the opening.

APPLICABILITY

In MODES 1, 2, and 3, a LOCA could lead to a fission product release to primary containment that leaks to [secondary containment]. Therefore, [secondary containment] OPERABILITY is required during the same operating conditions that require primary containment OPERABILITY.

In MODES 4 and 5, the probability and consequences of the LOCA are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining [secondary containment] OPERABLE is not required in MODE 4 or 5 to ensure a control volume, except for other situations for which significant releases of radioactive material can be postulated, such as during operations with a potential for draining the reactor vessel (OPDRVs) or during movement of [recently] irradiated fuel assemblies in the [primary or secondary containment].

[Due to radioactive decay, secondary containment is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days).]

----------REVIEWER'S NOTE----------
The addition of the term "recently" associated with handling irradiated fuel in all of the containment function Technical Specification requirements is only applicable to those licensees who have demonstrated by analysis that after sufficient radioactive decay has occurred, off-site doses resulting from a fuel handling accident remain below the Standard Review Plan limits (well within 10 CFR 100).

Additionally, licensees adding the term "recently" must make the following commitment which is consistent with NUMARC 93-01, Revision 4, Section 11.3.6.5, "Safety Assessment for Removal of Equipment from Service During Shutdown Conditions," subheading "Containment - Secondary (BWR)."

"The following guidelines are included in the assessment of systems removed from service during movement of irradiated fuel:

BASES

APPLICABILITY (continued)

- During fuel handling/core alterations, ventilation system and radiation monitor availability (as defined in NUMARC 91-06) should be assessed, with respect to filtration and monitoring of releases from the fuel. Following shutdown, radioactivity in the fuel decays away fairly rapidly. The basis of the Technical Specification operability amendment is the reduction in doses due to such decay. The goal of maintaining ventilation system and radiation monitor availability is to reduce doses even further below that provided by the natural decay.

- A single normal or contingency method to promptly close primary or secondary containment penetrations should be developed. Such prompt methods need not completely block the penetration or be capable of resisting pressure.

The purpose of the "prompt methods" mentioned above are to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored."

ACTIONS

A.1

If [secondary containment] is inoperable, it must be restored to OPERABLE status within 4 hours. The 4 hour Completion Time provides a period of time to correct the problem that is commensurate with the importance of maintaining [secondary containment] during MODES 1, 2, and 3. This time period also ensures that the probability of an accident (requiring [secondary containment] OPERABILITY) occurring during periods where [secondary containment] is inoperable is minimal.

B.1

----------REVIEWER'S NOTE ----------
Adopt of a MODE 3 end state requires the licensee to make the following commitments:

1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision 3, July 2000.

2. [LICENSEE] will follow the guidance established in TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 2, "Technical Specifications End States, NEDC-32988-A," November 2009.

BASES

ACTIONS (continued)

If the [secondary containment] cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4), because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action B.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

[C.1 and C.2

Movement of [recently] irradiated fuel assemblies in the [primary or secondary containment] and OPDRVs can be postulated to cause significant fission product release to the [secondary containment]. In such cases, the [secondary containment] is the only barrier to release of fission products to the environment. Therefore, movement of [recently] irradiated fuel assemblies must be immediately suspended if the [secondary containment] is inoperable.

Suspension of these activities shall not preclude completing an action that involves moving a component to a safe position. Also, action must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

BASES

ACTIONS (continued)

Required Action C.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving [recently] irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving [recently] irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of [recently] irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.]

SURVEILLANCE REQUIREMENTS

[SR 3.6.4.1.1

----------REVIEWER'S NOTE----------
SR 3.6.4.1.1 should be included if the accident analyses assume the [secondary] containment pressure is less than a certain value at the initiation of an accident.
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This SR ensures that the [secondary containment] *pressure is within the accident analysis assumptions.*~~boundary is sufficiently leak tight to preclude exfiltration under expected wind conditions.~~

The SR is modified by a Note which states the SR is not required to be met during transient conditions if the Standby Gas Treatment System remains capable of establishing the required [secondary containment] vacuum. Transient conditions in which [secondary containment] pressure may be less than the required containment vacuum may occur in many situations, such as, but not limited to, entry and exit from the [secondary containment], high winds, maintenance or testing of the [secondary containment], and failure or change of operating normal ventilation subsystems. These transient conditions are permitted if they do not impair the ability of the Standby Gas Treatment System to establish the post-accident [secondary containment] vacuum assumed in the accident analyses.

[The 24 hour Frequency of this SR was developed based on operating experience related to [secondary containment] vacuum variations during the applicable MODES and the low probability of a DBA occurring between surveillances.

Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal [secondary containment] vacuum condition.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
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SR 3.6.4.1.2 ~~and SR 3.6.4.1.3~~

Verifying that [secondary containment] equipment hatches ~~and one access door in each access opening~~ are closed ensures that the infiltration of outside air of such a magnitude as to prevent maintaining the desired negative pressure does not occur *and* ~~. Verifying that all such openings are closed~~ provides adequate assurance that exfiltration from the [secondary containment] will not occur. ~~In this application, the term "sealed" has no connotation of leak tightness. Maintaining [secondary containment] OPERABILITY requires verifying one door in the access opening is closed. [An access opening contains one inner and one outer~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~door. In some cases, [secondary] containment access openings are shared such that a [secondary] containment barrier may have multiple inner or multiple outer doors. The intent is to not breach the [secondary] containment at any time when [secondary] containment is required. This is achieved by maintaining the inner or outer portion of the barrier closed at all times.] However, all [secondary] containment access doors are normally kept closed, except when the access opening is being used for entry and exit or when maintenance is being performed on an access opening.~~ [The 31 day Frequency for ~~these~~ *this* SR~~s~~ has been shown to be adequate based on operating experience, and is considered adequate in view of the other indications of ~~door and~~ hatch status that are available to the operator.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
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SR 3.6.4.1.3

Verifying that one [secondary containment] access door in each access opening is closed provides adequate assurance that exfiltration from the [secondary containment] will not occur. An access opening contains at least one inner and one outer door. [In some cases, [secondary containment] access openings are shared such that there are multiple inner or outer doors.] The intent is to not breach the [secondary containment], which is achieved by maintaining the inner or outer portion of the barrier closed except when the access opening is being used for entry and exit.

[The 31 day Frequency for this SR has been shown to be adequate, based on operating experience, and is considered adequate in view of the other indications of door status that are available to the operator.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
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[SR 3.6.4.1.4 and] SR 3.6.4.1.5

The SGT System exhausts the [secondary] containment atmosphere to the environment through appropriate treatment equipment. Each SGT subsystem is designed to draw down pressure in the [secondary] containment to ≥[0.25] inches of vacuum water gauge in ≤ [120] seconds and maintain pressure in the [secondary] containment at ≥ [0.266] inches of vacuum water gauge for 1 hour at a flow rate ≤ [4000] cfm. To ensure that all fission products released to the [secondary] containment are treated, [SR 3.6.4.1.4 and] SR 3.6.4.1.5 verify that a pressure in the [secondary] containment that is less than the lowest postulated pressure external to the [secondary] containment boundary can [rapidly] be [established and] maintained. When the SGT System is operating as designed, the establishment and maintenance of [secondary] containment pressure cannot be accomplished if the [secondary] containment boundary is not intact. [Establishment of this pressure is confirmed by SR 3.6.4.1.4, which demonstrates that the [secondary] containment can be drawn down to ≥ [0.25] inches of vacuum water gauge in ≤ [120] seconds using one SGT subsystem.] SR 3.6.4.1.5 demonstrates that the pressure in the [secondary] containment can be maintained

BASES

SURVEILLANCE REQUIREMENTS (continued)

≥ [0.266] inches of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ [4000] cfm. The 1 hour test period allows [secondary] containment to be in thermal equilibrium at steady state conditions. The primary purpose of these SR[s] is to ensure [secondary] containment boundary integrity. The secondary purpose of these SR[s] is to ensure that the SGT subsystem being tested functions as designed. There is a separate LCO with Surveillance Requirements which serves the primary purpose of ensuring OPERABILITY of the SGT System. The inoperability of the SGT System does not necessarily constitute a failure of these Surveillance[s] relative to the [secondary] containment OPERABILITY.

SR 3.6.4.1.5 is modified by a Note which states that momentary transients less than the required vacuum do not invalidate the test. Momentary conditions during the test in which [secondary containment] pressure is less than the required containment vacuum may occur due to, for example, entry and exit from the [secondary containment] and high winds. These momentary transients are not indicative of an inability of the Standby Gas Treatment System to establish the post-accident [secondary containment] vacuum.

[These SR[s] need not be performed with each SGT subsystem. The SGT subsystem used for these Surveillance[s] is staggered to ensure that in addition to the requirements of LCO 3.6.4.3, either SGT subsystem will perform this test. Operating experience has shown the [secondary] containment boundary usually passes these Surveillance[s] when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
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REFERENCES

1. FSAR, Section [15.6.5].

2. FSAR, Section [15.7.6].

3. FSAR, Section [15.7.4].

4. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.