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BVY 00-88

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

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Technical Specification Proposed Change No. 236
Secondary Containment Systems

Pursuant to 10CFR50.90, Vermont Yankee (VY) hereby proposes to amend its Facility Operating License, DPR-28, by incorporating the attached proposed change into the VY Technical Specifications (TS). The proposed change revises TS requirements regarding the operation of secondary containment systems, including the Standby Gas Treatment System.

The proposed change to TS is modeled after aspects of NRC's Standard Technical Specifications for General Electric BWR/4s, NUREG-1433, Rev. 1. By revising the TS in accordance with this industry standard, additional flexibility in operations is achieved while also ensuring appropriate actions are taken to place the plant in a safe condition when equipment is made or found to be inoperable. Certain TS clarifications are also proposed.

Attachment 1 to this letter contains supporting information and the safety assessment of the proposed change. Attachment 2 contains the determination of no significant hazards consideration. Attachment 3 provides the marked-up version of the current Technical Specification and Bases pages. Attachment 4 is the retyped Technical Specification and Bases pages.

VY has reviewed the proposed Technical Specification change in accordance with 10CFR50.92 and concludes that the proposed change does not involve a significant hazards consideration.

VY has also determined that the proposed change satisfies the criteria for a categorical exclusion in accordance with 10CFR51.22(c)(9) and does not require an environmental review. Therefore, pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment has been prepared for this change.

Upon acceptance of this proposed change by the NRC, VY requests that a license amendment be issued by March 1, 2001 for implementation within 60 days of its effective date.

A001

If you have any questions on this transmittal, please contact Mr. Thomas B. Silko at (802) 258-4146.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Michael A. Balduzzi
Vice President, Operations

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

Then personally appeared before me, Michael A. Balduzzi, who, being duly sworn, did state that he is Vice President, Operations of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing document in the name and on the behalf of Vermont Yankee Nuclear Power Corporation, and that the statements therein are true to the best of his knowledge and belief.

Thomas B. Silko, Notary Public
My Commission Expires February 10, 2003

Attachments

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS
Vermont Department of Public Service

Docket No. 50-271
BVY 00-88

Attachment 1

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 236

Secondary Containment Systems

Supporting Information and Safety Assessment of Proposed Change

INTRODUCTION

This proposed change revises the Technical Specifications (TS) requirements regarding secondary containment systems, including the Standby Gas Treatment System (SBGTS). The affected TS sections are 1.0 (Definitions), 3/4.7.B (Standby Gas Treatment System), and 3/4.7.C (Secondary Containment System). In addition, a new TS section, 3/4.7.E (Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs), is being added. Some of the changes are administrative in nature and do not affect the technical aspects of the requirements. Associated Bases changes are also being made to conform to the changed TS. The proposed change is modeled after aspects of the Standard Technical Specifications[1] (STS) and provides certain additional flexibility in operations when equipment is made or found to be inoperable, while also ensuring appropriate actions are taken to place the plant in a safe condition under such conditions.

A mark-up of current Technical Specifications (CTS) pages reflecting the proposed change is included in Attachment 3, and re-typed pages incorporating these changes are included in Attachment 4. Individual changes are identified in Attachment 3 by bracketed "[ ]" numbers and correspond to the change numbers in the following Table 1.

BACKGROUND

Standby Gas Treatment System

The function of the SBGTS is to ensure that radioactive materials that may leak from the primary containment into the secondary containment following a design basis accident (DBA) are filtered and adsorbed prior to exhausting to the environment. Operation of the SBGTS is credited in Chapter 14 of the FSAR to mitigate the consequences of a loss-of-coolant accident (LOCA) and a fuel handling accident. Both SBGTS trains automatically start and operate in response to actuation signals indicative of conditions that could require operation of the system.

The SBGTS consists of two, complete independent trains, each sized to handle the full system requirements. Each train includes a demister, electric heaters, two high efficiency particulate (HEPA) filters, carbon adsorber, fan, and miscellaneous valves.

During periods of abnormal radioactivity levels in the secondary containment, effluent from the secondary containment is processed through the SBGTS to limit the discharge of radioactive material to the environs. The release of radioactivity by exfiltration from the secondary containment is limited by the SBGTS maintaining a negative pressure in the secondary containment.

Secondary Containment

The function of the secondary containment is to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. In conjunction with operation of the SBGTS, 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 includes components that may contain primary system fluid. This structure forms a control volume that serves to

[1] NRC's Standard Technical Specifications for General Electric BWR/4 Plants, NUREG-1433, Rev. 1

hold up and dilute the fission products. To prevent ground level exfiltration while allowing the secondary containment to be designed as a conventional structure, the secondary containment requires the SBGTS to maintain the control volume pressure at less than the external pressure. For secondary containment to be considered operable, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained.

Updated Final Safety Analysis Report (FSAR)

VY FSAR section 5.3 discusses secondary containment systems. The SBGTS, secondary containment, and reactor building penetrations are described in sections 5.3.3, 5.3.4, and 5.3.6, respectively. FSAR section 7.17 describes SBGTS control and instrumentation. Performance of these systems under postulated accident conditions is described in sections 14.6 and 14.9.6.

SAFETY ASSESSMENT

There are two principal accidents evaluated in Chapter 14 of the Vermont Yankee FSAR for which SBGTS and secondary containment operability is required. These are a loss-of-coolant accident (LOCA) and a fuel handling accident inside secondary containment. The secondary containment itself 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 SBGTS prior to discharge to the environment.

During cold shutdown and refueling conditions, the probability and consequences of a LOCA are reduced due to the pressure and temperature limitations in these modes. Therefore, maintaining secondary containment and SBGTS operable is not required under these conditions to ensure a control volume, except for situations for which significant releases of radioactive material can be postulated, such as during operations with a potential for draining the reactor vessel (OPDRVs), during core alterations, or during movement of irradiated fuel assemblies or the fuel cask in the secondary containment. In such cases, the secondary containment is the only barrier to the release of fission products to the environment, and upon loss of secondary containment, actions must be immediately initiated to suspend such activities.

Entry into a mode or condition when an LCO is not met

Although not part of VY's licensing basis, it has been VY's operating practice to implement the provisions of STS LCO 3.0.4 to limit entry into a mode or other operational condition when an LCO is not met. However, as is provided in LCO 3.0.4, during cold shutdown and refueling conditions, this limitation may not apply.

It is VY's determination that entry into a refueling or cold shutdown condition with one train of SBGTS inoperable is acceptable, and the prohibition on mode or condition entry does not apply in this instance. In this case, the requirements of revised TS 3.7.B.3.b are adequate to ensure that proper controls are in place. This determination is supported by the safety considerations discussed herein. This is reflective of the fact that, under these conditions, the accident risk is significantly reduced. It is reasonable to conclude that the consequences of these events are less severe than a design basis LOCA occurring during power operations. In addition, this change recognizes that one SBGTS train is adequate to perform the required radioactivity release control function.

Summary

In summary, the revised TS requirements for secondary containment systems (1) provide appropriate actions for circumstances involving the inoperability of equipment; (2) clarify the relationship between SBGTS and secondary containment; and, (3) further clarify the TS and its Bases. The proposed change will result in certain additional operational flexibility while also ensuring proper actions are taken to place the plant in a safe condition when required equipment is made or found to be inoperable. These revised TS are consistent with industry standards and practice.

Revising the requirements for secondary containment systems is consistent with the BWR/4 STS and is not a safety concern as explained in Table 1. Table 1 details each proposed change and provides the basis and safety assessment for each change.

Table 1

Change #	Current Technical Specification	Proposed Change
1	CTS 1.0.R.1 definition of "Startup/Hot Standby Mode" states: "In this mode the low turbine condenser volume trip is bypassed when..."	The word "volume" is changed to "vacuum." The subject sentence should now state: "In this mode the low turbine condenser vacuum trip is bypassed when..."
Basis/Safety Assessment: This change corrects an administrative error in TS 1.0.R (page 3 of CTS), in the definition of "Reactor Power Operation." Under the subheading, "Startup/Hot Standby Mode," the existing term "low turbine condenser volume trip" is changed to "low turbine condenser vacuum trip." There is no condenser "volume" trip and the only applicable trip is based on condenser "vacuum." This error in TS is believed to be a typographical error introduced through a past license amendment and has existed since at least the time of issuance of Amendment 70 (1981), but was not in the original full term operating license issued via Amendment 5 (1973). This correction is a change in terminology only and has no effect on any technical requirements in the TS. As such, it is an administrative change to correct an error and provide the correct terminology.		

Change #	Current Technical Specification	Proposed Change
2	CTS 1.0.U has the definition, "Secondary Containment Integrity."	Delete 1.0.U, the definition of "Secondary Containment Integrity."

Basis/Safety Assessment:

This change deletes TS 1.0.U (page 3 of CTS), the definition of "Secondary Containment Integrity."

A specific definition of Secondary Containment Integrity is not needed in TS since the requirements for operability of secondary containment are adequately addressed in TS LCOs and Bases. Also, the existing definition could be confusing as written, if it were concluded that an inoperable train of SBGTS meant that secondary containment could not be met. This would be contrary to existing TS that permit continued, but limited, operations with one train of the Standby Gas Treatment System (SBGTS) inoperable (generally, for seven days). A finding that secondary containment integrity is not met when required invokes limiting conditions for operation on a much shorter time scale. To avoid the potential confusion associated with this definition compared to its use in TS 3/4.7, and since the definition does not need to be included in TS to ensure public health and safety, it is being deleted. Provisions for secondary containment integrity are found in TS 3.7.C. The secondary containment integrity detail that at least one door in each access opening be closed is relocated to TS Bases. Requirements for SBGTS operability when secondary containment integrity is required are contained in TS 3.7.B.1. Reactor Building Automatic Ventilation System Isolation Valve requirements are included in an new TS 3/4.7.E (see below). This change is consistent with STS.

Change #	Current Technical Specification	Proposed Change
3	In several places, CTS 3/4.7.B uses different terminology in referring to a subsystem of the SBGTS. Currently, a subsystem of the SBGTS may be called a "train," a "circuit," or a "branch." "Circuit(s)" or "branch" occur in TS 3.7.B.1.a, 3.7.B.1.b (twice), 3.7.B.3.a (three times), 3.7.B.3.b (three times), 4.7.B.2.d, 4.7.B.3.a, and 4.7.B.3.c (twice).	For consistency, a subsystem of the SBGTS is called a "train."

Basis/Safety Assessment:

This is a change in terminology to achieve consistency within the TS and to conform to common use at VY. By adopting a single term, the potential for confusion is reduced; thus, reducing the potential for error. This is deemed an administrative change since there is no change in technical meaning or application, but rather adopts preferred terminology.

Change #	Current Technical Specification	Proposed Change
4	CTS 3.7.B.2.b requires that if the results of a laboratory carbon analysis are unacceptable, the applicable train of the SBGTS shall be considered inoperable.	A portion of CTS 3.7.B.2.b is relocated and reworded as new TS 3.7.B.2.d. New Specification 3.7.B.2.d is being added which states: "If Specification 3.7.B.2.a, 3.7.B.2.b, or 3.7.B.2.c is not met, the applicable train of the Standby Gas Treatment System shall be considered inoperable." As part of this change the revised last sentence of TS 3.7.B.2.b is changed to: "Laboratory analysis results shall be verified acceptable within 31 days following sample removal."

Basis/Safety Assessment:

This change revises TS 3.7.B.2.b (page 153 of CTS) and adds a new Specification 3.7.B.2.d. The last sentence of TS 3.7.B.2.b is being revised by relocating and modifying the phrase, "...or the applicable train of the Standby Gas Treatment System shall be considered in-operable and the requirements of Specification 3.7.B.3 shall apply."

This more restrictive change expands upon the need to declare SBGTS inoperable if the conditions of Specification 3.7.B.2.a, b, or c are not met. Only TS 3.7.B.2.b currently has this provision. The new Specification 3.7.B.2.d broadly applies this consideration to each of the requirements of TS 3.7.B.2. By clearly stating that each of these conditions are required to be met for the system to be considered operable, ambiguity of intent is eliminated. Also, since it is unnecessary to state that the "requirements of Specification 3.7.B.3 shall apply," this phrase is being deleted. It is understood that whenever a train is declared inoperable, other actions and completion times apply. This change is consistent with STS.

Change #	Current Technical Specification	Proposed Change
5	CTS 3.7.B.3.a allows reactor operation to continue for up to seven days when one train of the SBGTS is inoperable, provided that another condition is met.	An action statement is added to TS 3.7.B.3.a that requires: "If this condition cannot be met during reactor operation, or the inoperable train is not restored to operable status within seven days, the actions and completion times of Specification 3.7.B.4.a shall apply."

Basis/Safety Assessment:

CTS 3.7.B.3.a does not prescribe actions to be taken after seven days with one train inoperable or when the other required condition (i.e., all active components of the other train are operable) is not met. Therefore, this change adds an action statement at the end of TS 3.7.B.3.a (page 154 of CTS). The effect of this change is to require a plant shutdown when one train of SBGTS has been inoperable for more than seven days, or if all active components of the other SBGTS train are not operable. Thus, a restriction to continued plant operation is added to the TS, ensuring that the plant is placed in a safe condition where the potential need and demands for SBGTS operation are reduced or eliminated.

Specific actions are prescribed if the SBGTS cannot be restored to full operable status within the required completion time while at power or if all active components of the other SBGTS train are not operable. Under such circumstances, the reactor must be brought to at least hot shutdown within 12 hours and to cold shutdown within 36 hours (i.e., the requirements of new TS 3.7.B.4.a). This change is consistent with STS.

Change #	Current Technical Specification	Proposed Change
6	CTS 3.7.B.3.b allows operations requiring secondary containment for up to seven days when one train of the SBGTS is inoperable, provided that another condition is met.	An action statement is added to TS 3.7.B.3.b that requires: "If this condition cannot be met during a refueling or cold shutdown condition, the actions and completion times of Specification 3.7.B.4.b shall apply. After seven days with an inoperable train of the Standby Gas Treatment System during refueling or cold shutdown conditions requiring secondary containment integrity, the operable train of the Standby Gas Treatment System shall be placed in operation and its associated diesel generator shall be operable, or the actions and completion times of Specification 3.7.B.4.b shall apply." In addition, the word "only" is deleted from CTS 3.7.B.3.b.

Basis/Safety Assessment:

The CTS does not prescribe actions to be taken after seven days with an inoperable train of SBGTS or when the other required condition (i.e., all active components of the other SBGTS train are operable) is not met. Therefore, this change adds an action statement at the end of TS 3.7.B.3.b (page 154 of CTS). In addition, specific actions are prescribed if SBGTS is not restored to full operable status within the required seven day completion time during certain activities requiring secondary containment integrity, but unrelated to reactor power operation. Since these activities are independent of reactor operations, no compensatory action is required regarding reactor operations. However, when secondary containment integrity is required in accordance with the conditions of TS 3.7.C, the applicable activities must be suspended as specified.

During movement of irradiated fuel assemblies or the fuel cask in the secondary containment, during core alterations, or during OPDRVs, if the inoperable train of SBGTS cannot be restored to operable status within the required completion time (i.e., seven days), the operable SBGTS train must be placed in operation and its associated diesel generator must be operable.

The compensatory action of placing the operable train of SBGTS in operation and having its associated diesel generator operable, provide assurance that SBGTS will function as intended to mitigate the consequences of any event involving the release of fission products to the secondary containment. Furthermore, with time, the contained fission products and decay heat rate associated with irradiated fuel diminishes; thus reducing cooling demands and fission product inventory.

Placing the operable train of SBGTS into operation and having its associated diesel generator operable, ensures that the remaining train of SBGTS is operable, that no failures that could prevent automatic actuation have occurred, and that any other failure would be readily detected. The word "only" is being deleted from CTS 3.7.B.3.b since operations requiring secondary containment would be allowed beyond seven days under the provisions established.

An alternative to this action is to immediately suspend activities that represent a potential for releasing radioactive material to the secondary containment, thus placing the plant in a condition that minimizes risk. If applicable, core alterations and movement of irradiated fuel assemblies or the fuel cask must immediately be suspended. Suspension of these activities must not preclude completion of movement of a component to a safe position. Also, if applicable, actions must immediately be initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions to suspend OPDRVs must continue until OPDRVs are fully suspended. This action is consistent with STS.

When there is no movement of irradiated fuel assemblies or the fuel cask in secondary containment, no core alterations or OPDRVs in progress during cold shutdown and refueling conditions, both trains of SBGTS may be inoperable since secondary containment integrity is not required because the potential for a significant release of radioactive materials has been eliminated.

Change #	Current Technical Specification	Proposed Change
7	CTS 3.7.B.4 requires that if a condition is not met, procedures shall be immediately initiated to establish the conditions listed in Specifications 3.7.C.1(a) through (d), and compliance shall be achieved within 24 hours.	CTS 3.7.B.4 is being replaced in its entirety with the following: "With two trains of the Standby Gas Treatment System inoperable, or as made applicable by Specification 3.7.B.3: a. With the reactor in the run mode, startup mode, or hot shutdown condition, the reactor shall be placed in hot shutdown within 12 hours and cold shutdown within 36 hours. b. During movement of irradiated fuel assemblies or the fuel cask in the secondary containment, during core alterations, or during operations with the potential for draining the reactor vessel, immediately: i. Suspend movement of irradiated fuel assemblies and the fuel cask in secondary containment; and ii. Suspend core alterations; and iii. Initiate action to suspend operations with the potential for draining the reactor vessel."

Basis/Safety Assessment:

This change revises Specification 3.7.B.4 (page 154 of CTS) by replacing it in its entirety.

The current TS 3.7.B.4 is confusing as to the application of this Specification and what actions are required when applicable. The revised Specification will require actions to place the plant in a safe condition when limiting conditions for operation apply. The conditions identified in the revised TS impose appropriate actions when conditions cannot be met. In total, these changes and required actions to be taken upon making or discovering the inoperability of equipment are comprehensive. This change is consistent with STS.

Change #	Current Technical Specification	Proposed Change
8	CTS 3.7.C.1.a requires that secondary containment integrity be met when the reactor is in the Run Mode, Startup Mode, or Hot Shutdown Condition.	CTS 3.7.C.1.a is annotated with a footnote that states: "* NOTE: The reactor mode switch may be changed to either the Run or Startup/Hot Standby position, and operation not considered to be in the Run Mode or Startup Mode, to allow testing of instrumentation associated with the reactor mode switch interlock functions, provided: 1. Reactor coolant temperature is $\leq 212°$ F; 2. All control rods remain fully inserted in core cells containing one or more fuel assemblies; and 3. No core alterations are in progress."

Basis/Safety Assessment:

Certain periodic tests and calibrations are conducted when the reactor is shutdown or in a refueling condition. These surveillances may require placing the reactor mode switch in a position other than "Shutdown" or "Refuel" while secondary containment integrity is required. Application of this note to CTS 3.7.C.1.a (page 155 of CTS) permits manipulation of the reactor mode switch from one position to another to confirm certain aspects of associated interlocks. However, such movement of the reactor mode switch may only occur under the restricted conditions stated. Since interlock features of the reactor mode switch in Shutdown and Refuel preclude reactivity excursions, administratively controlling control rods inserted and no other core alterations in progress with reactor coolant temperature no greater than 212°F performs the same function. With these conditions met, there are no credible mechanisms for unacceptable reactivity excursions during interlock testing. Therefore, this is an acceptable means for reactivity control during the short periods necessary for testing of instrumentation associated with the reactor mode switch interlock functions.

Change #	Current Technical Specification	Proposed Change
9	CTS 4.7.C.1.d is a surveillance requirement to test the Reactor Building Automatic Ventilation System isolation valves in accordance with TS 4.6.E (i.e., the inservice testing program).	New TS 3/4.7.E adds Limiting Conditions for Operation and Surveillance Requirements regarding the Reactor Building Automatic Ventilation System Isolation Valves. CTS 4.7.C.1.d is relocated to this new TS section as TS 4.7.E.2. New TS 3.7.E states: "Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs) When secondary containment integrity is required, each RBAVSIV shall be operable, except as provided below. 1. With one or more penetration flow paths with one RBAVSIV inoperable, isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve or blind flange within 8 hours. 2. With one or more penetration flow paths with two RBAVSIVs inoperable, isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve or blind flange within 4 hours. 3. If the actions and completion times of Specification 3.7.E.1 or 3.7.E.2 cannot be met when the reactor is in the run mode, startup mode, or hot shutdown condition, the reactor shall be placed in hot shutdown within 12 hours and cold shutdown within 36 hours. 4. If the actions and completion times of Specification 3.7.E.1 or 3.7.E.2 cannot be met during movement of irradiated fuel assemblies or the fuel cask in the secondary containment, during core alterations, or during operations with the potential for draining the reactor vessel, immediately: a. Suspend movement of irradiated fuel assemblies and the fuel cask in secondary containment; and

		b. Suspend core alterations; and c. Initiate action to suspend operations with the potential for draining the reactor vessel." New TS 4.7.E states: "<u>Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)</u> 1. When secondary containment integrity is required, with one or more penetration flow paths with one or more RBAVSIVs inoperable, verify the affected penetration flow path is isolated once per 31 days. 2. Operability testing of the RBAVSIVs shall be performed in accordance with Specification 4.6.E."

Basis/Safety Assessment:

New TS 3/4.7.E adds Limiting Conditions for Operation and Surveillance Requirements to the TS. For completeness and proper formatting, CTS 4.7.C.1.d (page 155a of CTS) is relocated to this section as TS 4.7.E.2.

The operability requirements for RBAVSIVs help ensure that an adequate secondary containment boundary is maintained. Operability of RBAVSIVs serve to contain radioactive fission products within secondary containment to provide treatment by the SBGTS prior to release to the environment.

When secondary containment integrity is required, with one or more penetration flow paths with one or more RBAVSIVs inoperable, the affected penetration flow path(s) must be isolated. For penetrations with one inoperable RBAVSIV, an eight hour completion time for isolation is established. For penetrations with two inoperable RBAVSIVs, a four hour isolation completion time is established. Thereafter, the affected penetration flow path must be verified to be isolated once per 31 days. The method of isolation includes the use of at least one isolation barrier that cannot be adversely affected by a single active failure. The required action must be completed within the eight hour or four hour completion time, as applicable. The specified time periods are reasonable considering the time required to isolate the penetration, and the probability of a DBA occurring during this short time.

For affected penetrations that have been isolated in accordance with new TS 3.7.E, the affected penetration must be verified to be isolated on a periodic basis. This is necessary to ensure that the penetration will be isolated should an event occur that requires isolation. The verification frequency of once every 31 days is appropriate because the valves are operated under administrative controls and probability of their misalignment is low.

If any required action or completion time cannot be met as a result of one or more inoperable RBAVSIVs, the plant must be placed in a mode or condition where the Limiting Condition for Operation does not apply. To achieve this status during reactor power operation, the reactor must be brought to at least hot shutdown within 12 hours and to cold shutdown within 36 hours. The allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner without challenging plant systems. To achieve this status when secondary containment is required during shutdown or refueling conditions, core alterations and the movement of irradiated fuel assemblies and the fuel cask in the secondary containment must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be immediately initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and the subsequent potential for fission product release. These actions minimize the potential for an event occurring which could entail the release of radioactive fission products.

Operability testing of the RBAVSIVs remain unchanged from CTS and shall continue to be performed in accordance with Specification 4.6.E. This relocation of the requirement is an administrative change and does not affect any technical requirement. These new TS provide additional restrictions within TS to ensure safe plant operation and are consistent with STS.

Change #	Current Technical Specification	Proposed Change
10	Bases are provided for TS 3.7.B and 3.7.C regarding LCO requirements for the SBGTS and the Secondary Containment System.	The Bases for TS 3.7.B and 3.7.C are being updated to conform to the changes being made in this Proposed Change. In addition, new Bases are being added to correspond to new TS 3/4.7.E. A new paragraph is being inserted (on page 165a of CTS after the current second paragraph under the heading, "B. and C. Standby Gas Treatment System and Secondary Containment System") as the third paragraph of Bases 3.7.B and C as follows: "In order for secondary containment integrity to be met, the secondary containment must function properly in conjunction with the operation of the Standby Gas Treatment System to ensure that the required vacuum can be established and maintained. This means that the reactor building is intact with at least one door in each access opening closed, and all reactor building automatic ventilation system isolation valves are operable or the affected penetration flow path is isolated." Three additional paragraphs are being inserted into the next to last paragraph of current Bases 3.7.B and C (on page 166 of CTS, immediately after the sentence ending, "...operability of standby gas treatment is required.") The remainder of the existing paragraph is separated into a new paragraph. Insert: "Both trains of the Standby Gas Treatment System are normally operable when secondary containment integrity is required. However, Specification 3.7.B.3 provides Limiting Conditions for Operation when one train of the Standby Gas Treatment System is inoperable. Provisional, continued operation is permitted since the remaining operable train is adequate to perform the required radioactivity release control function. If the applicable conditions of Specification 3.7.B.3 cannot be met, the plant must be placed in a mode or condition where the Limiting

		Conditions for Operation do not apply." "Entry into a refueling condition with one train of SBGTS inoperable is acceptable and there is no prohibition on mode or condition entry in this situation. In this case, the requirements of TS 3.7.B.3.b are sufficient to ensure that adequate controls are in place. During refueling conditions, accident risk is significantly reduced, and the primary activities of concern involve core alterations, movement of irradiated fuel assemblies, and OPDRVs." "During refueling and cold shutdown conditions Specification 3.7.B.3.b provides for the indefinite continuance of refueling operations with one train of the Standby Gas Treatment System inoperable. When the seven-day completion time associated with Specification 3.7.B.3.b is not met and secondary containment integrity is required, the operable train of the Standby Gas Treatment System should immediately be placed into operation. This action ensures that the remaining train is operable, that no failures that could prevent automatic actuation have occurred, and that any other failure would be readily detected. An alternative to placing the operable train of Standby Gas Treatment in operation is to immediately suspend activities that represent a potential for releasing radioactive material to the secondary containment, thus placing the plant in a condition that minimizes risk." New Bases 3.7.E are being added as follows: "E. <u>Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)</u> The function of the RBAVSIVs, in combination with other accident mitigation systems, is to limit fission product release during and following postulated Design Basis Accidents (DBAs). The operability requirements for RBAVSIVs help ensure that an adequate secondary containment boundary is maintained during and after an accident by minimizing potential

		paths to the environment. The RBAVSIVs must be operable (or the penetration flow path isolated) to ensure secondary containment integrity and to limit the potential release of fission products to the environment. The valves covered by this Limiting Condition for Operation are included in the Inservice Testing Program." "In the event that there are one or more RBAVSIVs inoperable, the affected penetration flow path(s) 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. The required action must be completed within the eight hour or four hour completion time, as applicable. The specified time periods are reasonable considering the time required to isolate the penetration, and the probability of a DBA occurring during this short time." "If any required action or completion time cannot be met as a result of one or more inoperable RBAVSIVs, the plant must be placed in a mode or condition where the Limiting Condition for Operation does not apply. To achieve this status during reactor power operation, the reactor must be brought to at least hot shutdown within 12 hours and to cold shutdown within 36 hours. If applicable, core alterations and the movement of irradiated fuel assemblies and the fuel cask in the secondary containment must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be immediately initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Actions must continue until OPDRVs are suspended."

		New Bases 4.7.E are being added as follows: "E. <u>Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)</u> In the event that there are one or more RBAVSIVs inoperable when secondary containment integrity is required, the affected penetrations that have been isolated must be verified to be isolated on a periodic basis. This is necessary to ensure that those penetrations required to be isolated following an accident, but no longer capable of being automatically isolated, will be in the isolated position should an event occur. The verification frequency of once per 31 days is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low. Verification of isolation does not require any testing or device manipulation. Rather, it involves verification that the affected penetration remains isolated." "The RBAVSIVs covered by this surveillance requirement, along with their test requirements, are included in the Inservice Testing Program."

Basis/Safety Assessment:

This change revises the Bases for TS 3.7.B. and 3.7.C and adds Bases for new TS section 3/4.7.E. These Bases changes conform to the revised TS, clarify the existing Bases, and provide justification and meaning for TS requirements. A safety assessment is not made of the TS Bases since the Bases are not requirements (i.e., not part of the TS), but provide the reasons or justifications for the TS.

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 236

Secondary Containment Systems

Determination of No Significant Hazards Consideration

Determination of No Significant Hazards Consideration

Description of amendment request:

This request for amendment revises the requirements of Vermont Yankee Technical Specifications (TS) related to secondary containment systems contained in TS 1.0 (Definitions), 3/4.7.B (Standby Gas Treatment System), and 3/4.7.C (Secondary Containment System). In addition, a new TS, 3/4.7.E Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs), is being added. Some of the changes are administrative in nature and do not affect the technical aspects of the requirements. Associated Bases changes are also being made to conform to the changed TS. The proposed change is modeled after Standard Technical Specifications for General Electric BWR/4 plants and provides certain additional flexibility in operations with inoperable equipment while also ensuring appropriate actions are taken to place the plant in a safe condition under such conditions.

Basis for no significant hazards determination:

Pursuant to 10CFR50.92, Vermont Yankee (VY) has reviewed the proposed change and concludes that the change does not involve a significant hazards consideration since the proposed change satisfies the criteria in 10CFR50.92(c).

1. The operation of Vermont Yankee Nuclear Power Station in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

   No changes are being made to the plant design, physical system configuration, or basic method of operation as a result of the proposed amendment. The Standby Gas Treatment System (SBGTS) and secondary containment are not assumed to be initiators of any analyzed event. The circumstances for which operability of SBGTS and secondary containment are required are unchanged, and would not occur at any greater frequency as a result of this change. Therefore, the probability of a design basis loss-of-coolant accident or fuel handling accident (the applicable accidents) previously evaluated is not increased.

   The proposed change does not increase the consequences of an accident because system operability requirements are being maintained. In lieu of suspending refueling activities when one train of SBGTS is inoperable beyond seven days, placing the operable train of SBGTS in operation ensures that no failures that could prevent automatic actuation have occurred and that any other failure would be readily detected. Operation of one train of the SBGTS is sufficient to mitigate the consequences of any analyzed event. The secondary containment systems assumed to operate following a design basis accident continue to function as assumed in accident analyses to mitigate the consequences of postulated accidents.

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

2. The operation of Vermont Yankee Nuclear Power Station in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change does not involve any physical alteration to the plant structures, systems, or components (SSCs), or the basic manner in which these SSCs are operated or maintained. The methods by which these systems perform their safety function are unchanged and remain consistent with current safety analysis assumptions. There is no change in plant operation that involves failure modes other than those previously evaluated. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The operation of Vermont Yankee Nuclear Power Station in accordance with the proposed amendment will not involve a significant reduction in a margin of safety.

   The proposed change does not result in a significant reduction in a margin of safety because restrictions placed on operations which have the potential for releasing radioactive material to the secondary containment continue to be in accordance with the assumptions and conditions of existing safety analyses. Operations with inoperable equipment have the proper restrictions to maintain existing margins or to place the plant in a safe condition such that inoperable equipment is not required to meet safety analysis assumptions. Ensuring operability of one train of SBGTS together with required secondary containment integrity is sufficient to mitigate the consequences of any analyzed event. Since current analyses are unaffected in this regard, margins of safety are maintained.

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

Docket No. 50-271
BVY 00-88

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 236

Secondary Containment Systems

Marked-up Version of the Current Technical Specifications

1.0 DEFINITIONS

or more plant parameters in order to initiate trip system action. Initiation of protective action may require the tripping of a single trip system or the coincident tripping of two trip systems.

3. Protective Action - An action initiated by the protection system when a limit is reached. A protective action can be at a channel or system level.

4. Protective Function - A system protective action which results from the protective action of the channels monitoring a particular plant condition.

P. Rated Neutron Flux - Rated neutron flux is the neutron flux that corresponds to a steady state power level of 1593 thermal megawatts.

Q. Rated Thermal Power - Rated thermal power means a steady state power level of 1593 thermal megawatts.

R. Reactor Power Operation - Reactor power operation is any operation with the mode switch in the "Startup/Hot Standby" or "Run" position with the reactor critical and above 1% rated thermal power.

1. Startup/Hot Standby Mode - In this mode the low turbine condenser ~~volume~~ vacuum trip is bypassed when condenser vacuum is less than 12 inches Hg and both turbine stop valves and bypass valves are closed; the low pressure and the 10 percent closure main steamline isolation valve closure trips are bypassed; the reactor protection system is energized with IRM neutron monitoring system trips and control rod withdrawal interlocks in service and APRM neutron monitoring system operable.

[1]

2. Run Mode - In this mode the reactor system pressure is equal to or greater than 800 psig and the reactor protection system is energized with APRM protection and RBM interlocks in service.

S. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space detector.

T. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to a refueling and the startup of the plant subsequent to that refueling. For the purpose of designating frequency of testing and surveillance, a refueling outage shall mean a regularly scheduled refueling outage; however, where such outages occur within 8 months of the completion of the previous refueling outage, the required surveillance testing need not be performed until the next regularly scheduled outage.

Deleted

[2]

U. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and the following conditions are met:

1. At least one door in each access opening is closed.

1.0 DEFINITIONS

[2]

2. The standby gas treatment system is operable.

3. All reactor building automatic ventilation system isolation valves are operable or are secured in the isolated position.

V. Shutdown - The reactor is in a shutdown condition when the reactor mode switch is in the shutdown mode position and no core alterations are being performed. When the mode switch is placed in the shutdown position a reactor scram is initiated, power to the control rod drives is removed, and the reactor protection system trip systems are de-energized.

1. Hot Shutdown means conditions as above with reactor coolant temperature greater that 212°F.

2. Cold Shutdown means conditions as above with reactor coolant temperature equal to or less than 212°F.

3. Shutdown means conditions as above such that the effective multiplication factor (K_{eff}) of the core shall be less than 0.99.

W. Simulated Automatic Actuation - Simulated automatic actuation means applying a simulated signal to the sensor to actuate circuit in question.

X. Transition Boiling - Transition boiling means the boiling regime between nucleate and film boiling. Transition boiling is the regime in which both nucleate and film boiling occur intermittently with neither type being completely stable.

Y. Surveillance Frequency - Unless otherwise stated in these specifications, periodic surveillance tests, checks, calibrations, and examinations shall be performed within the specified surveillance intervals. These intervals may be adjusted plus 25%. The operating cycle interval is considered to be 18 months and the tolerance stated above is applicable.

If it is discovered that a surveillance was not performed within its specified frequency, declaring applicable Limiting Conditions for Operation (LCOs) not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified frequency, whichever is less. This delay period is permitted to allow performance of the surveillance.

If the surveillance is not performed within the delay period, applicable LCOs must immediately be declared not met, and applicable LCOs must be entered.

When the surveillance is performed within the delay period and the surveillance is not met (i.e., acceptance criteria are not satisfied), applicable LCOs must immediately be declared not met, and applicable LCOs must be entered.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
ΔP is reduced to <1.7) during required operability testing of the HPCI system pump, the RCIC system pump, the drywell-suppression chamber vacuum breakers, and the suppression chamber-reactor building vacuum breakers, and SGTS testing.	
d. If the specifications of 3.7.A.9.a cannot be met, and the differential pressure cannot be restored within the subsequent six (6) hour period, an orderly shutdown shall be initiated and the reactor shall be in a Hot Shutdown condition in six (6) hours and a Cold Shutdown condition in the following eighteen (18) hours.	
B. Standby Gas Treatment System	B. Standby Gas Treatment System
1. a. Except as specified in Specification 3.7.B.3.a below, whenever the reactor is in Run Mode or Startup Mode or Hot Shutdown condition, both ~~circuits~~ trains of the Standby Gas Treatment System shall be operable at all times when secondary containment integrity is required. [3]	1. At least once per operating cycle, not to exceed 18 months, the following conditions shall be demonstrated.
	a. Pressure drop across the combined HEPA and charcoal filter banks is less than 6 inches of water at 1500 cfm ±10%.
	b. Inlet heater input is at least 9 kW.
b. Except as specified in Specification 3.7.B.3.b below, whenever the reactor is in Refuel Mode or Cold Shutdown condition, both ~~circuits~~ trains of the Standby Gas	

3.7 LIMITING CONDITIONS FOR OPERATION

Treatment System and an alternate electrical power source, consisting of the associated Emergency Diesel Generator or Vernon tie, for each standby gas treatment ~~circuit~~ shall be operable at all times when secondary containment integrity is required.

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

b. The results of laboratory carbon sample analysis shall show ≥97.5% radioactive methyl iodide removal (30°C, 70% RH). Laboratory analysis results shall be verified acceptable within 31 days following sample removal. If the applicable train of the Standby Gas Treatment System shall be considered in-operable and the requirements of Specification 3.7.B.3 shall apply.

c. System fans shall be shown to operate within ±10% of design flow.

[4]

Insert #1

4.7 SURVEILLANCE REQUIREMENTS

2. a. The tests and sample analysis of Specification 3.7.B.2 shall be performed initially and at least once per operating cycle not to exceed 18 months, and following painting, fire or chemical release in any ventilation zone communicating with the system, while the system is operating, that could contaminate the HEPA filters or charcoal adsorbers.

train

[3]

b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank.

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal filter bank.

In addition, the sample analysis of Specification 3.7.B.2.b and the halogenated hydrocarbon test shall be performed after every 720 hours of normal system operation.

train

[3]

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

e. An ultrasonic leak test shall be performed on the gaskets sealing the housing panels downstream of the HEPA filters and adsorbers at least

Insert #1 [Insert as new Specification TS 3.7.B.2.d (current TS page 153)]

d. If Specification 3.7.B.2.a, 3.7.B.2.b, or 3.7.B.2.c is not met, the applicable train of the Standby Gas Treatment System shall be considered inoperable.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
3. a. From and after the date that one ~~circuit~~ of the Standby Gas Treatment System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such ~~circuit~~ is sooner made operable, provided that during such seven days all active components of the other standby gas treatment ~~circuit~~ shall be operable.	once per operating cycle not to exceed 18 months. If the ultrasonic test indicates the presence of a leak, the condition will be evaluated and the gasket repaired or replaced as necessary.
	f. DOP and halogenated hydrocarbon test shall be performed following any design modification to the Standby Gas Treatment System housing that could have an effect on the filter efficiency.
	g. An air distribution test demonstrating uniformity within ±20% across the HEPA filters and charcoal adsorbers shall be performed if the SGTS housing is modified such that air distribution could be affected.
3. b. From and after the date that one ~~circuit~~ of the Standby Gas Treatment System is made or found to be inoperable for any reason, operations requiring secondary containment are permissible ~~only~~ during the succeeding seven days unless such ~~circuit~~ is sooner made operable, provided that during such seven days all active components, including the associated Emergency Diesel Generator of the other standby gas treatment ~~circuit~~ shall be operable.	3. a. At least once per operating cycle automatic initiation of each ~~branch~~ of the Standby Gas Treatment System shall be demonstrated.
	b. Operability testing of valves shall be in accordance with Specification 4.6.B
	c. When one ~~circuit~~ of the Standby Gas Treatment System is made or found to be inoperable, the other ~~circuit~~ shall have been or shall be demonstrated to be operable within 24 hours.
4. If this condition cannot be met, procedures shall be initiated immediately to establish the conditions listed in Specifications 3.7.C.1(a) through (d), and compliance shall be completed within 24 hours thereafter.	

Insert #2

[5]

train

[3]

[6]

Insert #3

[6]

Insert #4

[7]

Insert #2 [Insert at the end of TS 3.7.B.3.a (current TS page 154)]

If this condition cannot be met during reactor operation, or the inoperable train is not restored to operable status within seven days, the actions and completion times of Specification 3.7.B.4.a shall apply.

Insert #3 [Insert at the end of TS 3.7.B.3.b (current TS page 154)]

If this condition cannot be met during a refueling or cold shutdown condition, the actions and completion times of Specification 3.7.B.4.b shall apply. After seven days with an inoperable train of the Standby Gas Treatment System during refueling or cold shutdown conditions requiring secondary containment integrity, the operable train of the Standby Gas Treatment System shall be placed in operation and its associated diesel generator shall be operable, or the actions and completion times of Specification 3.7.B.4.b shall apply.

Insert #4 [Insert to replace current LCO 3.7.B.4 (current TS page 154)]

With two trains of the Standby Gas Treatment System inoperable, or as made applicable by Specification 3.7.B.3:

a. With the reactor in the run mode, startup mode, or hot shutdown condition, the reactor shall be placed in hot shutdown within 12 hours and cold shutdown within 36 hours.

b. During movement of irradiated fuel assemblies or the fuel cask in the secondary containment, during core alterations, or during operations with the potential for draining the reactor vessel, immediately:

   i. Suspend movement of irradiated fuel assemblies and the fuel cask in secondary containment; and
   ii. Suspend core alterations; and
   iii. Initiate action to suspend operations with the potential for draining the reactor vessel.

3.7 LIMITING CONDITIONS FOR OPERATION

C. Secondary Containment System

1. Secondary Containment Integrity shall be maintained during the following modes or conditions:

   a. Whenever the reactor is in the Run Mode, Startup Mode, or Hot Shutdown condition; or

   b. During movement of irradiated fuel assemblies or the fuel cask in secondary containment; or

   c. During alteration of the Reactor Core; or

   d. During operations with the potential for draining the reactor vessel.

4.7 SURVEILLANCE REQUIREMENTS

C. Secondary Containment System

1. Surveillance of secondary containment shall be performed as follows:

   a. A preoperational secondary containment capability test shall be conducted after isolating the Reactor Building and placing either Standby Gas Treatment System filter train in operation. Such tests shall demonstrate the capability to maintain a 0.15 inch of water vacuum under calm wind ($2 < u < 5$ mph) condition with a filter train flow rate of not more than 1500 cfm.

   b. Additional tests shall be performed during the first operating cycle under an adequate number of different environmental wind conditions to enable valid extrapolation of the test results.

   c. Secondary containment capability to maintain a 0.15 inch of water vacuum under calm wind ($2 < \bar{u} < 5$ mph) conditions with a filter train flow rate of not more than 1,500 cfm, shall be demonstrated at least quarterly and at each refueling outage prior to refueling.

Insert #5

[8]

Insert #5 [Insert the following footnote at the end of current TS 3.7.C.1.a (current TS page 155)]

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* NOTE: The reactor mode switch may be changed to either the Run or Startup/Hot Standby position, and operation not considered to be in the Run Mode or Startup Mode, to allow testing of instrumentation associated with the reactor mode switch interlock functions, provided:

1. Reactor coolant temperature is $\leq$ 212° F;

2. All control rods remain fully inserted in core cells containing one or more fuel assemblies; and

3. No core alterations are in progress.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
	d. Operability testing of the Reactor Building Automatic Ventilation System isolation valves shall be performed in accordance with Specification 4.6.E. [9]
2. With Secondary Containment Integrity not maintained with the reactor in the Run Mode, Startup Mode, or Hot Shutdown condition, restore Secondary Containment Integrity within four (4) hours.	2. Intentionally blank.
3. If Specification 3.7.C.2 cannot be met, place the reactor in the Hot Shutdown condition within 12 hours and in the Cold Shutdown condition within the following 24 hours.	3. Intentionally blank.
4. With Secondary Containment Integrity not maintained during movement of irradiated fuel assemblies or the fuel cask in secondary containment, during alteration of the Reactor Core, or during operations with the potential for draining the reactor vessel, immediately perform the following actions:	4. Intentionally blank.
a. Suspend movement of irradiated fuel assemblies and the fuel cask in secondary containment; and	
b. Suspend alteration of the Reactor Core; and	
c. Initiate action to suspend operations with the potential for draining the reactor vessel.	

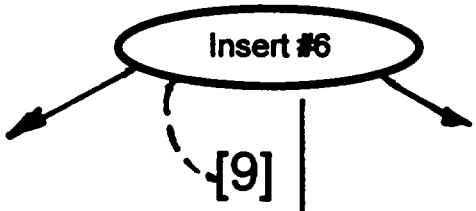
3.7 LIMITING CONDITIONS FOR OPERATION

2. In the event any containment isolation valve becomes inoperable, reactor power operation may continue provided at least one containment isolation valve in each line having an inoperable valve is in the mode corresponding to the isolated condition.

3. If Specifications 3.7.D.1 and 3.7.D.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

4.7 SURVEILLANCE REQUIREMENTS

2. Whenever a containment isolation valve is inoperable, the position of at least one other valve in each line having an inoperable valve shall be logged daily.



Insert #6 [Insert as new Specifications 3.7.E and 4.7.E (current TS page 157)]

3.7.E. Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)

When secondary containment integrity is required, each RBAVSIV shall be operable, except as provided below.

1. With one or more penetration flow paths with one RBAVSIV inoperable, isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve or blind flange within 8 hours.

2. With one or more penetration flow paths with two RBAVSIVs inoperable, isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve or blind flange within 4 hours.

3. If the actions and completion times of Specification 3.7.E.1 or 3.7.E.2 cannot be met when the reactor is in the run mode, startup mode, or hot shutdown condition, the reactor shall be placed in hot shutdown within 12 hours and cold shutdown within 36 hours.

4. If the actions and completion times of Specification 3.7.E.1 or 3.7.E.2 cannot be met during movement of irradiated fuel assemblies or the fuel cask in the secondary containment, during core alterations, or during operations with the potential for draining the reactor vessel, immediately:

   a. Suspend movement of irradiated fuel assemblies and the fuel cask in secondary containment; and

   b. Suspend core alterations; and

   c. Initiate action to suspend operations with the potential for draining the reactor vessel.

4.7.E. Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)

1. When secondary containment integrity is required, with one or more penetration flow paths with one or more RBAVSIVs inoperable, verify the affected penetration flow path is isolated once per 31 days.

2. Operability testing of the RBAVSIVs shall be performed in accordance with Specification 4.6.E.

BASES: 3.7 (Cont'd)

surveillances such as monthly torus to drywell vacuum breaker tests. Procedurally, when AC-6A is open, AC-6 and AC-7 are closed to prevent overpressurization of the SBGT system or the reactor building ductwork, should a LOCA occur. For this and similar analyses performed, a spurious opening of AC-6 or AC-7 (one of the closed containment isolation valves) is not assumed as a failure simultaneous with a postulated LOCA. Analyses demonstrate that for normal plant operation system alignments, including surveillances such as those described above, that SBGT integrity would be maintained if a LOCA was postulated. Therefore, during normal plant operations, the 90 hour clock does not apply. Accordingly, opening of the 18 inch atmospheric control isolation valves AC-7A, AC-7B, AC-8 and AC-10 will be limited to 90 hours per calendar year (except for performance of the subject valve stroke time surveillances - in which case the appropriate corresponding valves are closed to protect equipment should a LOCA occur). This restriction will apply whenever primary containment integrity is required. The 90 hour clock will apply anytime purge and vent evolutions can not assure the integrity of the SBGT trains or related equipment.

B. and C. Standby Gas Treatment System and Secondary Containment System

The secondary containment is designed to minimize any ground level release of radioactive materials which might result from a serious accident. The Reactor Building provides secondary containment during reactor operation, when the drywell is sealed and in service; the Reactor Building provides primary containment when the reactor is shutdown and the drywell is open, as during refueling. Because the secondary containment is an integral part of the complete containment system, secondary containment is required at all times that primary containment is required except, however, for initial fuel loading and low power physics testing.

In the Cold Shutdown condition or the Refuel Mode,the probability and consequences of the LOCA are reduced due to the pressure and temperature limitations in these conditions. Therefore, maintaining Secondary Containment Integrity is not required in the Cold Shutdown condition or the Refuel Mode, 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, during alteration of the Reactor Core, or during movement of irradiated fuel assemblies or the fuel cask in the secondary containment.

Insert #7

[10]

With the reactor in the Run Mode, the Startup Mode, or the Hot Shutdown condition, if Secondary Containment Integrity is not maintained, Secondary Containment Integrity must be restored within 4 hours. The 4 hours provides a period of time to correct the problem that is commensurate with the importance of maintaining secondary containment during the Run Mode, the Startup Mode, and the Hot Shutdown condition. This time period also ensures that the probability of an accident (requiring Secondary Containment Integrity) occurring during periods where Secondary Containment Integrity is not maintained, is minimal. If Secondary Containment

Insert #7 [Insert into the Bases for TS 3.7.B. and 3.7.C.(current TS page 165a)]

In order for secondary containment integrity to be met, the secondary containment must function properly in conjunction with the operation of the Standby Gas Treatment System to ensure that the required vacuum can be established and maintained. This means that the reactor building is intact with at least one door in each access opening closed, and all reactor building automatic ventilation system isolation valves are operable or the affected penetration flow path is isolated.

BASES: 3.7 (Cont'd)

The Standby Gas Treatment System (SGTS) is designed to filter and exhaust the Reactor Building atmosphere to the stack during secondary containment isolation conditions, with a minimum release of radioactive materials from the Reactor Building to the environs. To insure that the standby gas treatment system will be effective in removing radioactive contaminates from the Reactor Building air, the system is tested periodically to meet the intent of ANSI N510-1975. Laboratory charcoal testing will be performed in accordance with ASTM D3803-1989, except, as allowed by GL 99-02, testing can be performed at 70% relative humidity for systems with humidity control. Both standby gas treatment fans are designed to automatically start upon containment isolation and to maintain the Reactor Building pressure to approximately a negative 0.15 inch water gauge pressure; all leakage should be in-leakage. Should the fan fail to start, the redundant alternate fan and filter system is designed to start automatically. Each of the two fans has 100% capacity. This substantiates the availability of the operable ~~circuit~~ and results in no added risk; thus, reactor operation or refueling operation can continue. If neither ~~circuit~~ is operable, the plant is brought to a condition where the system is not required.

When the reactor is in cold shutdown or refueling the drywell may be open and the Reactor Building becomes the only containment system. During cold shutdown the probability and consequences of a DBA LOCA are substantially reduced due to the pressure and temperature limitations in this mode. However, for other situations under which significant radioactive release can be postulated, such as during operations with a potential for draining the reactor vessel, during core alterations, or during movement of irradiated fuel in the secondary containment, operability of standby gas treatment is required. An alternate electrical power source for the purposes of Specification 3.7.B.1.b shall consist of either an Emergency Diesel Generator (EDG) or the Vernon Hydro tie line. Maintaining availability of the Vernon Hydro tie line as an alternative to one of the EDGs in this condition provides assurance that standby gas treatment can, if required, be operated without placing undue constraints on EDG maintenance availability. Inoperability of both ~~circuits~~ of the SGTS or both EDGs during refueling operations requires suspension of activities that represent a potential for releasing radioactive material to the secondary containment, thus placing the plant in a condition that minimizes risk.

train

[3]

Insert #8

Use of the SGTS, without the fan and the 9 kW heater in operation, as a vent path during torus venting does not impact subsequent adsorber capability because of the very low flows and because humidity control is maintained by the standby 1 kW heaters, therefore operation in this manner does not accrue as operating time.

[10]

D. Primary Containment Isolation Valves

Double isolation valves are provided on lines that penetrate the primary containment and communicate directly with the reactor vessel and on lines that penetrate the primary containment and communicate with the primary containment free space. Closure of one of the valves in each line would be sufficient to maintain the integrity of the pressure suppression system. Automatic initiation is required to minimize the potential leakage paths from the containment in the event of a loss-of-coolant accident.

Insert #9

[10]

Insert #8 [Insert into the Bases for TS 3.7.B. and 3.7.C. (current TS page 166)]

[new paragraphs]

Both trains of the Standby Gas Treatment System are normally operable when secondary containment integrity is required. However, Specification 3.7.B.3 provides Limiting Conditions for Operation when one train of the Standby Gas Treatment System is inoperable. Provisional, continued operation is permitted since the remaining operable train is adequate to perform the required radioactivity release control function. If the applicable conditions of Specification 3.7.B.3 cannot be met, the plant must be placed in a mode or condition where the Limiting Conditions for Operation do not apply.

Entry into a refueling condition with one train of SBGTS inoperable is acceptable and there is no prohibition on mode or condition entry in this situation. In this case, the requirements of TS 3.7.B.3.b are sufficient to ensure that adequate controls are in place. During refueling conditions, accident risk is significantly reduced, and the primary activities of concern involve core alterations, movement of irradiated fuel assemblies, and OPDRVs.

During refueling and cold shutdown conditions Specification 3.7.B.3.b provides for the indefinite continuance of refueling operations with one train of the Standby Gas Treatment System inoperable. When the seven-day completion time associated with Specification 3.7.B.3.b is not met and secondary containment integrity is required, the operable train of the Standby Gas Treatment System should immediately be placed into operation. This action ensures that the remaining train is operable, that no failures that could prevent automatic actuation have occurred, and that any other failure would be readily detected. An alternative to placing the operable train of Standby Gas Treatment in operation is to immediately suspend activities that represent a potential for releasing radioactive material to the secondary containment, thus placing the plant in a condition that minimizes risk.

[end of paragraph]

Insert #9 [Insert as new Bases 3.7.E (current TS page 166)]

E. Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)

The function of the RBAVSIVs, in combination with other accident mitigation systems, is to limit fission product release during and following postulated Design Basis Accidents (DBAs). The operability requirements for RBAVSIVs help ensure that an adequate secondary containment boundary is maintained during and after an accident by minimizing potential paths to the environment. The RBAVSIVs must be operable (or the penetration flow path isolated) to ensure secondary containment integrity and to limit the potential release of fission products to the environment. The valves covered by this Limiting Condition for Operation are included in the Inservice Testing Program.

In the event that there are one or more RBAVSIVs inoperable, the affected penetration flow path(s) 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. The required action must be completed within the eight hour or four hour completion time, as applicable. The specified time periods are reasonable considering the time required to isolate the penetration, and the probability of a DBA occurring during this short time.

If any required action or completion time cannot be met as a result of one or more inoperable RBAVSIVs, the plant must be placed in a mode or condition where the Limiting Condition for Operation does not apply. To achieve this status during reactor power operation, the reactor must be brought to at least hot shutdown within 12 hours and to cold shutdown within 36 hours. If applicable, core alterations and the movement of irradiated fuel assemblies and the fuel cask in the secondary containment must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be immediately initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

BASES: 4.7 (Cont'd)

D. Primary Containment Isolation Valves

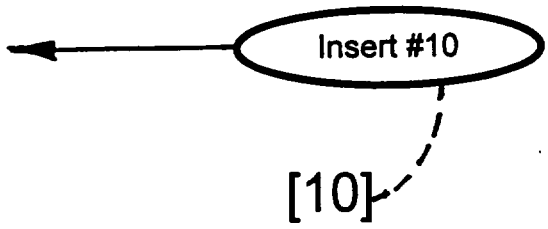
Those large pipes comprising a portion of the reactor coolant system whose failure could result in uncovering the reactor core are supplied with automatic isolation valves (except those lines needed for emergency core cooling system operation or containment cooling). The closure times specified herein and per Specification 4.6.E are adequate to prevent loss of more cooling from the circumferential rupture of any of these lines outside the containment than from a steam line rupture. Therefore, the isolation valve closure times are sufficient to prevent uncovering the core.

Purge and vent valve testing performed by Allis-Chalmers has demonstrated that all butterfly purge and vent valves installed at Vermont Yankee can close from full open conditions at design basis containment pressure. However, as an additional conservative measure, limit stops have been added to valves 16-19-7/7A, limiting the opening of these valves to 50° open while operating, as requested by NRC in their letter of May 22, 1984. (NVY 84-108)

In order to assure that the doses that may result from a steam line break do not exceed the 10CFR100 guidelines, it is necessary that no fuel rod perforation resulting from the accident occur prior to closure of the main steam line isolation valves. Analyses indicate the fuel rod cladding perforations would be avoided for the main steam valve closure times, including instrument delay, as long as 10.5 seconds. The test closure time limit of five seconds for these main steam isolation valves provides sufficient margin to assure that cladding perforations are avoided and 10CFR100 limits are not exceeded. Redundant valves in each line ensure that isolation will be effected applying the single failure criteria.

The main steam isolation valves are primary containment isolation valves and are tested in accordance with the requirements of the Inservice Testing program.

The containment is penetrated by a large number of small diameter instrument lines. The flow check valves in these lines are tested for operability in accordance with Specification 4.6.E.



Insert #10 [Insert as new Bases 4.7.E (current TS page 171)]

E. Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)

In the event that there are one or more RBAVSIVs inoperable when secondary containment integrity is required, the affected penetrations that have been isolated must be verified to be isolated on a periodic basis. This is necessary to ensure that those penetrations required to be isolated following an accident, but no longer capable of being automatically isolated, will be in the isolated position should an event occur. The verification frequency of once per 31 days is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low. Verification of isolation does not require any testing or device manipulation. Rather, it involves verification that the affected penetration remains isolated.

The RBAVSIVs covered by this surveillance requirement, along with their test requirements, are included in the Inservice Testing Program.

Attachment 4

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 236

Secondary Containment Systems

Retyped Technical Specification Pages

Listing of Affected Technical Specifications Pages

Replace the Vermont Yankee Nuclear Power Station Technical Specifications pages listed below with the revised pages. The revised pages contain vertical lines in the margin indicating the areas of change.

Remove	Insert
3	3
4	4
152	152
153	153
154	154
155	155
155a	155a
156	156
157	157
158	158
-	158a
165a	165a
165b	165b
166	166
166a	166a
-	166b
171	171

or more plant parameters in order to initiate trip system action. Initiation of protective action may require the tripping of a single trip system or the coincident tripping of two trip systems.

3. Protective Action - An action initiated by the protection system when a limit is reached. A protective action can be at a channel or system level.

4. Protective Function - A system protective action which results from the protective action of the channels monitoring a particular plant condition.

P. Rated Neutron Flux - Rated neutron flux is the neutron flux that corresponds to a steady state power level of 1593 thermal megawatts.

Q. Rated Thermal Power - Rated thermal power means a steady state power level of 1593 thermal megawatts.

R. Reactor Power Operation - Reactor power operation is any operation with the mode switch in the "Startup/Hot Standby" or "Run" position with the reactor critical and above 1% rated thermal power.

1. Startup/Hot Standby Mode - In this mode the low turbine condenser vacuum trip is bypassed when condenser vacuum is less than 12 inches Hg and both turbine stop valves and bypass valves are closed; the low pressure and the 10 percent closure main steamline isolation valve closure trips are bypassed; the reactor protection system is energized with IRM neutron monitoring system trips and control rod withdrawal interlocks in service and APRM neutron monitoring system operable.

2. Run Mode - In this mode the reactor system pressure is equal to or greater than 800 psig and the reactor protection system is energized with APRM protection and RBM interlocks in service.

S. Reactor Vessel Pressure - Unless otherwise indicated, reactor vessel pressures listed in the Technical Specifications are those measured by the reactor vessel steam space detector.

T. Refueling Outage - Refueling outage is the period of time between the shutdown of the unit prior to a refueling and the startup of the plant subsequent to that refueling. For the purpose of designating frequency of testing and surveillance, a refueling outage shall mean a regularly scheduled refueling outage; however, where such outages occur within 8 months of the completion of the previous refueling outage, the required surveillance testing need not be performed until the next regularly scheduled outage.

U. Deleted

V. Shutdown - The reactor is in a shutdown condition when the reactor mode switch is in the shutdown mode position and no core alterations are being performed. When the mode switch is placed in the shutdown position a reactor scram is initiated, power to the control rod drives is removed, and the reactor protection system trip systems are de-energized.

1. Hot Shutdown means conditions as above with reactor coolant temperature greater that 212°F.

2. Cold Shutdown means conditions as above with reactor coolant temperature equal to or less than 212°F.

3. Shutdown means conditions as above such that the effective multiplication factor (K_{eff}) of the core shall be less than 0.99.

W. Simulated Automatic Actuation - Simulated automatic actuation means applying a simulated signal to the sensor to actuate circuit in question.

X. Transition Boiling - Transition boiling means the boiling regime between nucleate and film boiling. Transition boiling is the regime in which both nucleate and film boiling occur intermittently with neither type being completely stable.

Y. Surveillance Frequency - Unless otherwise stated in these specifications, periodic surveillance tests, checks, calibrations, and examinations shall be performed within the specified surveillance intervals. These intervals may be adjusted plus 25%. The operating cycle interval is considered to be 18 months and the tolerance stated above is applicable.

If it is discovered that a surveillance was not performed within its specified frequency, declaring applicable Limiting Conditions for Operation (LCOs) not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified frequency, whichever is less. This delay period is permitted to allow performance of the surveillance.

If the surveillance is not performed within the delay period, applicable LCOs must immediately be declared not met, and applicable LCOs must be entered.

When the surveillance is performed within the delay period and the surveillance is not met (i.e., acceptance criteria are not satisfied), applicable LCOs must immediately be declared not met, and applicable LCOs must be entered.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
ΔP is reduced to <1.7) during required operability testing of the HPCI system pump, the RCIC system pump, the drywell-suppression chamber vacuum breakers, and the suppression chamber-reactor building vacuum breakers, and SGTS testing.	
d. If the specifications of 3.7.A.9.a cannot be met, and the differential pressure cannot be restored within the subsequent six (6) hour period, an orderly shutdown shall be initiated and the reactor shall be in a Hot Shutdown condition in six (6) hours and a Cold Shutdown condition in the following eighteen (18) hours.	
B. Standby Gas Treatment System	B. Standby Gas Treatment System
1. a. Except as specified in Specification 3.7.B.3.a below, whenever the reactor is in Run Mode or Startup Mode or Hot Shutdown condition, both trains of the Standby Gas Treatment System shall be operable at all times when secondary containment integrity is required.	1. At least once per operating cycle, not to exceed 18 months, the following conditions shall be demonstrated.
	a. Pressure drop across the combined HEPA and charcoal filter banks is less than 6 inches of water at 1500 cfm ±10%.
b. Except as specified in Specification 3.7.B.3.b below, whenever the reactor is in Refuel Mode or Cold Shutdown condition, both trains of the Standby Gas	b. Inlet heater input is at least 9 kW.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
Treatment System and an alternate electrical power source, consisting of the associated Emergency Diesel Generator or Vernon tie, for each standby gas treatment train shall be operable at all times when secondary containment integrity is required.	
2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA and charcoal filter banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.	2. a. The tests and sample analysis of Specification 3.7.B.2 shall be performed initially and at least once per operating cycle not to exceed 18 months, and following painting, fire or chemical release in any ventilation zone communicating with the system, while the system is operating, that could contaminate the HEPA filters or charcoal adsorbers.
b. The results of laboratory carbon sample analysis shall show ≥97.5% radioactive methyl iodide removal (30°C, 70% RH). Laboratory analysis results shall be verified acceptable within 31 days following sample removal.	b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank.
c. System fans shall be shown to operate within ±10% of design flow.	c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal filter bank. In addition, the sample analysis of Specification 3.7.B.2.b and the halogenated hydrocarbon test shall be performed after every 720 hours of normal system operation.
d. If Specification 3.7.B.2.a, 3.7.B.2.b, or 3.7.B.2.c is not met, the applicable train of the Standby Gas Treatment System shall be considered inoperable.	d. Each train shall be operated with the heaters on at least 10 hours every month.
	e. An ultrasonic leak test shall be performed on the gaskets sealing the housing panels downstream of the HEPA filters and adsorbers at least

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
3. a. From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such train is sooner made operable, provided that during such seven days all active components of the other standby gas treatment train shall be operable. If this condition cannot be met during reactor operation, or the inoperable train is not restored to operable status within seven days, the actions and completion times of Specification 3.7.B.4.a shall apply.	once per operating cycle not to exceed 18 months. If the ultrasonic test indicates the presence of a leak, the condition will be evaluated and the gasket repaired or replaced as necessary.
	f. DOP and halogenated hydrocarbon test shall be performed following any design modification to the Standby Gas Treatment System housing that could have an effect on the filter efficiency.
	g. An air distribution test demonstrating uniformity within ±20% across the HEPA filters and charcoal adsorbers shall be performed if the SGTS housing is modified such that air distribution could be affected.
3. b. From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, operations requiring secondary containment are permissible during the succeeding seven days unless such train is sooner made operable, provided that during such seven days all active components, including the associated Emergency Diesel Generator of the other standby gas treatment train shall be operable. If this condition cannot be met during a refueling or cold	3. a. At least once per operating cycle automatic initiation of each train of the Standby Gas Treatment System shall be demonstrated. b. Operability testing of valves shall be in accordance with Specification 4.6.E. c. When one train of the Standby Gas Treatment System is made or found to be inoperable, the other train shall have been or shall be demonstrated to be operable within 24 hours.

3.7 LIMITING CONDITIONS FOR OPERATION

4.7 SURVEILLANCE REQUIREMENTS

shutdown condition, the actions and completion times of Specification 3.7.B.4.b shall apply. After seven days with an inoperable train of the Standby Gas Treatment System during refueling or cold shutdown conditions requiring secondary containment integrity, the operable train of the Standby Gas Treatment System shall be placed in operation and its associated diesel generator shall be operable, or the actions and completion times of Specification 3.7.B.4.b shall apply.

4. With two trains of the Standby Gas Treatment System inoperable, or as made applicable by Specification 3.7.B.3:

   a. With the reactor in the run mode, startup mode, or hot shutdown condition, the reactor shall be placed in hot shutdown within 12 hours and cold shutdown within 36 hours.

   b. During movement of irradiated fuel assemblies or the fuel cask in the secondary containment, during core alterations, or during operations with the potential for draining the reactor vessel, immediately:

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
i. Suspend movement of irradiated fuel assemblies and the fuel cask in secondary containment; and	
ii. Suspend core alterations; and	
iii. Initiate action to suspend operations with the potential for draining the reactor vessel.	
C. Secondary Containment System	C. Secondary Containment System
1. Secondary Containment Integrity shall be maintained during the following modes or conditions:	1. Surveillance of secondary containment shall be performed as follows:
a. Whenever the reactor is in the Run Mode, Startup Mode, or Hot Shutdown condition*; or	a. A preoperational secondary containment capability test shall be conducted after isolating the Reactor Building and placing either Standby Gas Treatment System filter train in operation. Such tests shall demonstrate the capability to maintain a 0.15 inch of water vacuum under calm wind ($2 < u < 5$ mph) condition with a filter train flow rate of not more than 1500 cfm.

* NOTE: The reactor mode switch may be changed to either the Run or Startup/Hot Standby position, and operation not considered to be in the Run Mode or Startup Mode, to allow testing of instrumentation associated with the reactor mode switch interlock functions, provided:

1. Reactor coolant temperature is $\leq 212°F$;
2. All control rods remain fully inserted in core cells containing one or more fuel assemblies; and
3. No core alterations are in progress.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
b. During movement of irradiated fuel assemblies or the fuel cask in secondary containment; or	b. Additional tests shall be performed during the first operating cycle under an adequate number of different environmental wind conditions to enable valid extrapolation of the test results.
c. During alteration of the Reactor Core; or	c. Secondary containment capability to maintain a 0.15 inch of water vacuum under calm wind ($2<\bar{u}<5$ mph) conditions with a filter train flow rate of not more than 1,500 cfm, shall be demonstrated at least quarterly and at each refueling outage prior to refueling.
d. During operations with the potential for draining the reactor vessel.	

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
2. With Secondary Containment Integrity not maintained with the reactor in the Run Mode, Startup Mode, or Hot Shutdown condition, restore Secondary Containment Integrity within four (4) hours.	2. Intentionally blank.
3. If Specification 3.7.C.2 cannot be met, place the reactor in the Hot Shutdown condition within 12 hours and in the Cold Shutdown condition within the following 24 hours.	3. Intentionally blank.
4. With Secondary Containment Integrity not maintained during movement of irradiated fuel assemblies or the fuel cask in secondary containment, during alteration of the Reactor Core, or during operations with the potential for draining the reactor vessel, immediately perform the following actions: a. Suspend movement of irradiated fuel assemblies and the fuel cask in secondary containment; and b. Suspend alteration of the Reactor Core; and c. Initiate action to suspend operations with the potential for draining the reactor vessel.	4. Intentionally blank.
5. Core spray and LPCI pump lower compartment door openings shall be closed at all times except during passage or when reactor coolant temperature is less than 212°F.	5. The core spray and LPCI lower compartment openings shall be checked closed daily.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
D. Primary Containment Isolation Valves	D. Primary Containment Isolation Valves
1. During reactor power operating conditions all containment isolation valves and all instrument line flow check valves shall be operable except as specified in Specification 3.7.D.2.	1. Surveillance of the primary containment isolation valves should be performed as follows: a. The operable isolation valves that are power operated and automatically initiated shall be tested for automatic initiation and the closure times specified in Table 4.7.2 at least once per operating cycle. b. Operability testing of the primary containment isolation valves shall be performed in accordance with Specification 4.6.E. c. At least once per quarter, with the reactor power less than 75 percent of rated, trip all main steam isolation valves (one at a time) and verify closure time.
2. In the event any containment isolation valve becomes inoperable, reactor power operation may continue provided at least one containment isolation valve in each line having an inoperable valve is in the mode corresponding to the isolated condition.	2. Whenever a containment isolation valve is inoperable, the position of at least one other valve in each line having an inoperable valve shall be logged daily.
3. If Specifications 3.7.D.1 and 3.7.D.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.	

3.7 LIMITING CONDITIONS FOR OPERATION

E. Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)

When secondary containment integrity is required, each RBAVSIV shall be operable, except as provided below.

1. With one or more penetration flow paths with one RBAVSIV inoperable, isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve or blind flange within 8 hours.

2. With one or more penetration flow paths with two RBAVSIVs inoperable, isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve or blind flange within 4 hours.

3. If the actions and completion times of Specification 3.7.E.1 or 3.7.E.2 cannot be met when the reactor is in the run mode, startup mode, or hot shutdown condition, the reactor shall be placed in hot shutdown within 12 hours and cold shutdown within 36 hours.

4. If the actions and completion times of Specification 3.7.E.1 or 3.7.E.2 cannot be met during movement of irradiated fuel assemblies or the fuel cask in the secondary containment, during core alterations, or during operations with the potential for draining the reactor vessel, immediately:

   a. Suspend movement of irradiated fuel assemblies and the fuel cask in secondary containment; and

   b. Suspend core alterations; and

   c. Initiate action to suspend operations with the potential for draining the reactor vessel.

4.7 SURVEILLANCE REQUIREMENTS

E. Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)

1. When secondary containment integrity is required, with one or more penetration flow paths with one or more RBAVSIVs inoperable, verify the affected penetration flow path is isolated once per 31 days.

2. Operability testing of the RBAVSIVs shall be performed in accordance with Specification 4.6.E.

BASES: 3.7 (Cont'd)

surveillances such as monthly torus to drywell vacuum breaker tests. Procedurally, when AC-6A is open, AC-6 and AC-7 are closed to prevent overpressurization of the SBGT system or the reactor building ductwork, should a LOCA occur. For this and similar analyses performed, a spurious opening of AC-6 or AC-7 (one of the closed containment isolation valves) is not assumed as a failure simultaneous with a postulated LOCA. Analyses demonstrate that for normal plant operation system alignments, including surveillances such as those described above, that SBGT integrity would be maintained if a LOCA was postulated. Therefore, during normal plant operations, the 90 hour clock does not apply. Accordingly, opening of the 18 inch atmospheric control isolation valves AC-7A, AC-7B, AC-8 and AC-10 will be limited to 90 hours per calendar year (except for performance of the subject valve stroke time surveillances - in which case the appropriate corresponding valves are closed to protect equipment should a LOCA occur). This restriction will apply whenever primary containment integrity is required. The 90 hour clock will apply anytime purge and vent evolutions can not assure the integrity of the SBGT trains or related equipment.

B. and C. Standby Gas Treatment System and Secondary Containment System

The secondary containment is designed to minimize any ground level release of radioactive materials which might result from a serious accident. The Reactor Building provides secondary containment during reactor operation, when the drywell is sealed and in service; the Reactor Building provides primary containment when the reactor is shutdown and the drywell is open, as during refueling. Because the secondary containment is an integral part of the complete containment system, secondary containment is required at all times that primary containment is required except, however, for initial fuel loading and low power physics testing.

In the Cold Shutdown condition or the Refuel Mode, the probability and consequences of the LOCA are reduced due to the pressure and temperature limitations in these conditions. Therefore, maintaining Secondary Containment Integrity is not required in the Cold Shutdown condition or the Refuel Mode, 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, during alteration of the Reactor Core, or during movement of irradiated fuel assemblies or the fuel cask in the secondary containment.

In order for secondary containment integrity to be met, the secondary containment must function properly in conjunction with the operation of the Standby Gas Treatment System to ensure that the required vacuum can be established and maintained. This means that the reactor building is intact with at least one door in each access opening closed, and all reactor building automatic ventilation system isolation valves are operable or the affected penetration flow path is isolated.

With the reactor in the Run Mode, the Startup Mode, or the Hot Shutdown condition, if Secondary Containment Integrity is not maintained, Secondary Containment Integrity must be restored within 4 hours. The 4 hours provides a period of time to correct the problem that is commensurate with the importance of maintaining secondary containment during the Run Mode, the Startup Mode, and the Hot Shutdown condition. This time period also ensures that the probability of an accident (requiring Secondary Containment Integrity) occurring during periods where Secondary Containment Integrity is not maintained, is minimal.

BASES: 3.7 (Cont'd)

If Secondary Containment Integrity cannot be restored within the required time period, the plant must be brought to a mode or condition in which the LCO does not apply.

Movement of irradiated fuel assemblies or the fuel cask in the secondary containment, alteration of the Reactor Core, and operations with the potential for draining the reactor vessel can be postulated to cause 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. Alteration of the Reactor Core and movement of irradiated fuel assemblies and the fuel cask must be immediately suspended if Secondary Containment Integrity is not maintained. 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 operations with the potential for draining the reactor vessel to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until operations with the potential for draining the reactor vessel are suspended.

BASES: 3.7 (Cont'd)

An alternate electrical power source for the purposes of Specification 3.7.B.1.b shall consist of either an Emergency Diesel Generator (EDG) or the Vernon Hydro tie line. Maintaining availability of the Vernon Hydro tie line as an alternative to one of the EDGs in this condition provides assurance that standby gas treatment can, if required, be operated without placing undue constraints on EDG maintenance availability. Inoperability of both trains of the SGTS or both EDGs during refueling operations requires suspension of activities that represent a potential for releasing radioactive material to the secondary containment, thus placing the plant in a condition that minimizes risk.

Use of the SGTS, without the fan and the 9 kW heater in operation, as a vent path during torus venting does not impact subsequent adsorber capability because of the very low flows and because humidity control is maintained by the standby 1 kW heaters, therefore operation in this manner does not accrue as operating time.

D. Primary Containment Isolation Valves

Double isolation valves are provided on lines that penetrate the primary containment and communicate directly with the reactor vessel and on lines that penetrate the primary containment and communicate with the primary containment free space. Closure of one of the valves in each line would be sufficient to maintain the integrity of the pressure suppression system. Automatic initiation is required to minimize the potential leakage paths from the containment in the event of a loss-of-coolant accident.

E. Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)

The function of the RBAVSIVs, in combination with other accident mitigation systems, is to limit fission product release during and following postulated Design Basis Accidents (DBAs). The operability requirements for RBAVSIVs help ensure that an adequate secondary containment boundary is maintained during and after an accident by minimizing potential paths to the environment. The RBAVSIVs must be operable (or the penetration flow path isolated) to ensure secondary containment integrity and to limit the potential release of fission products to the environment. The valves covered by this Limiting Condition for Operation are included in the Inservice Testing Program.

In the event that there are one or more RBAVSIVs inoperable, the affected penetration flow path(s) 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. The required action must be completed within the eight hour or four hour completion time, as applicable. The specified time periods are reasonable considering the time required to isolate the penetration, and the probability of a DBA occurring during this short time.

If any required action or completion time cannot be met as a result of one or more inoperable RBAVSIVs, the plant must be placed in a mode or condition where the Limiting Condition for Operation does not apply. To achieve this status during reactor power operation, the reactor must be brought to at least hot shutdown within 12 hours and to cold shutdown within 36 hours. If applicable, core alterations and the movement of irradiated fuel assemblies and the fuel cask in the secondary containment must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be immediately initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

BASES: 4.7 (Cont'd)

D. Primary Containment Isolation Valves

Those large pipes comprising a portion of the reactor coolant system whose failure could result in uncovering the reactor core are supplied with automatic isolation valves (except those lines needed for emergency core cooling system operation or containment cooling). The closure times specified herein and per Specification 4.6.E are adequate to prevent loss of more cooling from the circumferential rupture of any of these lines outside the containment than from a steam line rupture. Therefore, the isolation valve closure times are sufficient to prevent uncovering the core.

Purge and vent valve testing performed by Allis-Chalmers has demonstrated that all butterfly purge and vent valves installed at Vermont Yankee can close from full open conditions at design basis containment pressure. However, as an additional conservative measure, limit stops have been added to valves 16-19-7/7A, limiting the opening of these valves to 50° open while operating, as requested by NRC in their letter of May 22, 1984. (NVY 84-108)

In order to assure that the doses that may result from a steam line break do not exceed the 10CFR100 guidelines, it is necessary that no fuel rod perforation resulting from the accident occur prior to closure of the main steam line isolation valves. Analyses indicate the fuel rod cladding perforations would be avoided for the main steam valve closure times, including instrument delay, as long as 10.5 seconds. The test closure time limit of five seconds for these main steam isolation valves provides sufficient margin to assure that cladding perforations are avoided and 10CFR100 limits are not exceeded. Redundant valves in each line ensure that isolation will be effected applying the single failure criteria.

The main steam isolation valves are primary containment isolation valves and are tested in accordance with the requirements of the Inservice Testing program.

The containment is penetrated by a large number of small diameter instrument lines. The flow check valves in these lines are tested for operability in accordance with Specification 4.6.E.

E. Reactor Building Automatic Ventilation System Isolation Valves (RBAVSIVs)

In the event that there are one or more RBAVSIVs inoperable when secondary containment integrity is required, the affected penetrations that have been isolated must be verified to be isolated on a periodic basis. This is necessary to ensure that those penetrations required to be isolated following an accident, but no longer capable of being automatically isolated, will be in the isolated position should an event occur. The verification frequency of once per 31 days is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low. Verification of isolation does not require any testing or device manipulation. Rather, it involves verification that the affected penetration remains isolated.

The RBAVSIVs covered by this surveillance requirement, along with their test requirements, are included in the Inservice Testing Program.