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BVY 96-39

United States Nuclear Regulatory Commission
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References: (a) License No. DPR-28 (Docket No. 50-271)
(b) NUREG-1433 Rev.1, Standard Technical Specifications for General Electric Plants, BWR/4

SUBJECT: Proposed Change No. 184
Secondary Containment Integrity Requirements

Pursuant to Section 50.90 of the Commission's Rules and Regulations, Vermont Yankee Nuclear Power Corporation hereby proposes the following changes to the facility Operating License [Reference (a)].

Proposed Change

The proposed changes revise the current Technical Specification requirements for Secondary Containment based on the guidance provided in Reference (b). The proposed changes are as follows:

1. Page 155, Specification 3.7.C. Replace the existing requirements of Specification 3.7.C.1 with "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."

2. Page 155, Specification 3.7.C. Provide actions to be taken in the event Secondary Containment Integrity is not maintained when the reactor is in an applicable Mode or condition.

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3. Page 155, Specification 4.7.C.1. Provide an additional Surveillance Requirement to better ensure Secondary Containment Integrity is maintained when required. The additional Surveillance Requirement is:

   d. Operability testing of the reactor building automatic ventilation system isolation valves shall be performed in accordance with Specification 4.6.E.

4. Page 152, Specification 3.7.B.1. Revise the Applicability of the Standby Gas Treatment System to include the Hot Shutdown condition and the Cold Shutdown condition for consistency with the changes made to the Secondary Containment requirements in Specification 3.7.C.1.

5. Page 156, Specifications 3.7.C.2 and 4.7.C.2. Revise the numbering of existing Specifications 3.7.C.2 and 4.7.C.2 to Specifications 3.7.C.5 and 4.7.C.5, respectively, to accommodate the additional Specifications added after Specification 3.7.C.1.

6. Page 165, Bases 3.7.B. and 3.7.C. Revise to include changes commensurate with those made to Specification 3.7.C.

7. Page 169, Bases 4.7.B. and 4.7.C. Revise to include changes commensurate with those made to Specification 4.7.C.

Reason/Basis for Change

The proposed changes will revise the current Technical Specification requirements for Secondary Containment based on the guidance for Secondary Containment requirements provided in Specification 3.6.4.1 in Reference (b). Also, an additional Surveillance Requirement for reactor building automatic ventilation system isolation valves have been added based on the guidance for Secondary Containment Isolation Valve requirements provided in Specification 3.6.4.2 in Reference (b). The guidance in Reference (b) has been modified based on the Vermont Yankee plant specific licensing, design, and analyses bases. The other proposed changes are being made to achieve consistency with the changes made to the current Technical Specification requirements for Secondary Containment. The proposed changes help to ensure the integrity of the secondary containment is maintained so it will be capable of performing as assumed in the safety analyses. The proposed changes will also provide the benefit of increased flexibility in scheduling refueling outage activities.

Safety Consideration

The function of the secondary containment is to contain and hold up fission products that may leak from primary containment following a Design Basis Accident (DBA). In conjunction with operation of the standby gas treatment system and closure of certain valves, 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. There are two principal accidents for which credit is taken for Secondary Containment Integrity. These are a loss of coolant accident (LOCA) and a fuel handling accident. In response to each of these limiting events, Secondary Containment Integrity is required to ensure that

fission products entrapped within the secondary containment structure will be treated by the standby gas treatment system prior to discharge to the environment. The proposed changes ensure Secondary Containment Integrity is maintained as assumed in the accident analyses.

Proposed changes 1) items a (other than the elimination of the requirement for the reactor to be vented discussed in the less restrictive change below), b, and c, 5), 6), and 7) are administrative in nature and do not involve any technical changes. These proposed changes have no impact on any safety analysis assumptions. Because these changes are administrative in nature, no question of safety is involved.

Proposed Change 1) items a, b, and c

The Applicability has been reworded to be consistent with the definitions of Modes and conditions used in other sections of the Technical Specifications and to have a positive statement as to when Specification 3.7.C.1 is applicable, not when it is not applicable. Existing Specifications 3.7.C.1.a and 3.7.C.1.b form the Run Mode, the Startup Mode, and the Hot Shutdown condition requirements in proposed Specification 3.7.C.1.a (the elimination of the requirement for the reactor to be vented from existing Specification 3.7.C.1.b is discussed in the less restrictive change below). The existing requirement of Specification 3.7.C.1.c is encompassed by the requirement for Secondary Containment Integrity to be maintained during Alteration of the Reactor Core in proposed Specification 3.7.C.1.c. Existing Specification 3.7.C.1.d forms the basis for movement of the fuel cask or irradiated fuel assemblies in the secondary containment, in proposed Specification 3.7.C.1.b. As a result, these proposed changes are considered to be administrative in nature.

Proposed Change 5)

The numbering of existing Specifications 3.7.C.2 and 4.7.C.2 is proposed to be revised to Specifications 3.7.C.5 and 4.7.C.5, respectively, to accommodate the additional Specifications added after Specification 3.7.C.1. This proposed editorial change is considered to be administrative in nature.

Proposed Changes 6) and 7)

Changes to the Bases 3.7.B. and 3.7.C. and Bases 4.7.B. and 4.7.C. are proposed commensurate with those changes proposed to be made to Specifications 3.7.C. and 4.7.C. Since the technical changes associated with the proposed changes to Specifications are addressed separately, the corresponding proposed changes to the Bases are considered to be administrative in nature.

Proposed changes 1) item d, 2), 3), and 4) incorporate more restrictive changes into the current Technical Specifications by adding new requirements which currently do not exist.

Proposed Change 1) item d

A new Applicability was added for operations with a potential for draining the reactor vessel in proposed Specification 3.7.C.1.d. Secondary Containment Integrity is proposed to be required during operations with a potential for draining the reactor vessel to provide for mitigation of consequences should an inadvertent vessel draindown event occur. The new Applicability is an additional restriction to plant operation and is necessary to ensure that under situations

where a significant radioactive release can be postulated (in this case, an operation with the potential for draining the reactor vessel as stated in current Bases 3.7.B. and 3.7.C) Secondary Containment Integrity is maintained to ensure that fission products entrapped within the secondary containment structure will be treated by the standby gas treatment system prior to discharge to the environment.

Proposed Change 2)

Actions have been provided for the condition of Secondary Containment Integrity not maintained. A 4 hour allowed outage time is provided to restore Secondary Containment Integrity when the reactor is in the Run Mode, the Startup Mode, or the Hot Shutdown condition (proposed Specification 3.7.C.2). If Secondary Containment Integrity is not restored within 4 hours, then a plant shutdown is required (proposed Specification 3.7.C.3). When Secondary Containment Integrity is not maintained during movement of irradiated fuel or the fuel cask in secondary containment, during Alteration of the Reactor Core, or during operations with the potential for draining the reactor vessel, actions in proposed Specification 3.7.C.4 require the movement of irradiated fuel and the fuel cask in secondary containment and Alteration of the Reactor Core, to be immediately suspended. In addition to this condition, action must be immediately initiated to suspend operations with the potential to drain the reactor vessel. The current Technical Specifications do not specify actions when Secondary Containment Integrity is not maintained. As a result, providing actions to be taken in the event Secondary Containment Integrity is not maintained constitutes an additional restriction on plant operations necessary to ensure that the probability of an accident (requiring Secondary Containment Integrity) occurring during periods when Secondary Containment Integrity is not maintained is minimal.

Proposed Change 3)

An additional Surveillance Requirement has been added to help ensure Secondary Containment Integrity is maintained when required. The Surveillance Requirement is to verify the reactor building automatic ventilation system isolation valves are tested in accordance with Specification 4.6.E (proposed Specification 4.7.C.1.d). Specification 4.6.E requires testing of valves in accordance with Section XI of the ASME Code. The addition of this Surveillance Requirement constitutes a more restrictive change necessary to ensure Secondary Containment Integrity will be maintained as assumed in the safety analyses.

Additional Reference (b) surveillance requirements were not added to this section based upon operating history. The surveillances involved verifying that secondary containment equipment hatches and access doors are closed. These potential openings are either locked closed or alarmed, and have not historically been found open such that secondary containment integrity was violated. Additionally, functional testing requirements for Reactor Building Ventilation System isolation valves was not included in this section because it was already contained in Technical Specification Section 3.2.

Proposed Change 4)

Currently, the Applicability of the Standby Gas Treatment System Specification is whenever the reactor is in the Run Mode, Startup Mode, or Refuel Mode when secondary containment integrity is required. The Applicability of the Standby Gas Treatment System will be revised to

also include the Hot Shutdown condition and the Cold Shutdown condition for consistency with the changes made to the Secondary Containment requirements in Specification 3.7.C.1 (described in proposed change 1) and the current Technical Specification Bases. The current bases 3.7.B. and 3.7.C. state "However, for other situations under which significant radioactive release can be postulated, such as during operations with the 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." Since operations can occur with the reactor in the Shutdown Mode, the standby gas treatment system would also be required during these conditions. As a result, revising the Applicability of the Standby Gas Treatment System Specification (Specification 3.7.B.1) to include the Hot Shutdown condition and the Cold Shutdown condition (associated with the reactor mode switch in Shutdown) when Secondary containment integrity is required constitutes a more restrictive change necessary to achieve consistency with the Secondary Containment requirements of proposed Specification 3.7.C.1 and the current Technical Specification Bases.

Proposed Change 1) item a, also makes a less restrictive change.

During the change to the Applicability for Secondary Containment Integrity, the requirement for the reactor to be vented is proposed to be eliminated from current Specification 3.7.C.1.b. Current Specification 3.7.C.1.b would allow Secondary Containment not to be maintained provided reactor water temperature is below 212°F and the reactor coolant system is vented and the requirements of current Specification 3.7.C.1.a, c, and d are met. As discussed in the administrative changes, these requirements are addressed in proposed Specifications 3.7.C.1.a, b, and c. The requirement for the reactor coolant system to be vented is not addressed by the proposed Specifications and is proposed to be eliminated from the Technical Specifications. The requirement to vent the reactor coolant system will be controlled administratively.

Secondary Containment Integrity is required to ensure that fission products entrapped within the secondary containment structure will be treated by the standby gas treatment system prior to discharge to the environment. When the reactor is in the Cold Shutdown condition or the Refuel Mode, the probability and consequences of the Design Basis Accident requiring Secondary Containment Integrity to be maintained 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 as stated in current Bases 3.7.B and 3.7.C.

The reactor in the Cold Shutdown condition or the Refuel Mode with the reactor coolant system not vented does not constitute a situation for which significant releases of radioactive material can be postulated. The reactor coolant system will normally be vented when the reactor is in the Cold Shutdown condition or the Refuel Mode. With the reactor coolant system not vented when the reactor is in the Cold Shutdown condition (for example, during an inservice leak and hydrostatic test in the Cold Shutdown condition (mode switch in Shutdown and reactor coolant system temperature less than or equal to 212°F)) or the Refuel Mode, no mechanism exists to impart additional fission products into the reactor coolant. Under these conditions, activities for which the reactor coolant system would not be vented would be strictly controlled and

monitored. As a result, leaks or pipe breaks would typically be detected before significant inventory loss occurred. These activities would typically be performed after refueling when few noncondensible gases remain in the reactor coolant. The temperature limitation of 212°F will ensure that water, not steam, would be emitted from the postulated leak or pipe break. In addition, under these conditions, stored energy is sufficiently low that even with a loss of inventory following a recirculation line break, core coverage would be maintained by the low pressure emergency core cooling systems required per Specification 3.5.H and the fuel would not exceed its peak clad temperature limit. As a result, the potential for failed fuel and a subsequent increase in reactor coolant activity is minimized and significant releases of radioactive material would not be expected to occur. Therefore, it is considered acceptable to eliminate the requirement to maintain Secondary Containment Integrity with the reactor coolant system not vented in the Cold Shutdown condition or the Refuel Mode. This change is consistent with Reference (b).

These proposed changes have been reviewed by the Vermont Yankee Plant Operations Review Committee and the Vermont Yankee Nuclear Safety Audit and Review Committee.

Significant Hazards Consideration

The Standards used to arrive at a determination that a request for amendment involves no significant hazards are included in the Commission's regulations (10CFR50.92) which states that the operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. In addition, the Commission has provided guidance in the practical application of these criteria in 51FR7751, dated March 6, 1986.

The discussion below addresses each of the criteria and demonstrates that the proposed amendment involves no significant hazards consideration.

1) The proposed changes do not result in any hardware changes. The requirements for Secondary Containment Integrity are not assumed in the initiation of any analyzed event. The proposed changes establish and maintain adequate assurance that Secondary Containment Integrity will be maintained as assumed in analyses for the mitigation of accident consequences. Not requiring Secondary Containment Integrity when the reactor coolant system is not vented in the Cold Shutdown condition or the Refuel Mode does not involve an increase in previously evaluated accident consequences since no mechanism exists to impart additional fission products into the reactor coolant. Under these conditions, activities for which the reactor coolant system would not be vented would be strictly controlled and monitored. As a result, leaks or pipe breaks would typically be detected before significant inventory loss occurred. These activities would typically be performed after refueling when few noncondensible gases remain in the reactor coolant. The temperature limitation of 212°F will ensure that water, not steam, would be emitted from the postulated leak or pipe break. In addition, under these conditions, stored energy is sufficiently low that even with loss of inventory following a recirculation line break, core coverage would be maintained by the low pressure emergency core cooling systems required per Specification 3.5.H and the fuel would not exceed its peak clad temperature limit. As a result, the potential for failed fuel and a subsequent increase in reactor coolant activity is minimized and significant releases of radioactive material to the

environment would not be expected to occur. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2) The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal operation and will not alter the method used by any system to perform its design function. The proposed changes do not allow plant operation in any mode that is not already evaluated and will still ensure Secondary Containment Integrity is maintained when required. Thus, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3) The proposed changes to Secondary Containment Integrity requirements have no impact on any safety analysis assumptions. Secondary Containment Integrity will be maintained as assumed in the safety analyses and as stated in current Bases 3.7.B. and 3.7.C. Not requiring Secondary Containment Integrity when the reactor coolant system is not vented in the Cold Shutdown condition or the Refuel Mode does not involve a significant reduction in a margin of safety since no mechanism exists to impart additional fission products into the reactor coolant. Under these conditions, activities for which the reactor coolant system would not be vented would be strictly controlled and monitored. As a result, leaks or pipe breaks would typically be detected before significant inventory loss occurred. These activities would typically be performed after refueling, at low decay levels, and with reactor coolant temperature less than or equal to 212°F. In addition under these conditions, stored energy in the reactor core is very low. The reactor pressure vessel would rapidly depressurize in the event of a large primary system leak and the low pressure emergency core cooling systems required per Specification 3.5.H under these conditions would be adequate to keep the core flooded. This would ensure that the fuel would not be uncovered and would not exceed the peak clad temperature limit. As a result, the potential for failed fuel and a subsequent increase in reactor coolant activity is minimized and significant releases of radioactive material to the environment would not be expected to occur. Therefore, these changes do not involve a significant reduction in a margin of safety.

Based on the above discussion, we have determined that these changes do not constitute a significant hazard consideration as defined in 10CFR50.92(c).

Schedule of Change

The proposed change will be incorporated into Vermont Yankee Technical Specifications as soon as practicable following receipt of your approval.

We trust that the information provided adequately supports our request. However, should you have any question in this matter, please do not hesitate to contact us.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Donald A. Reid
Vice President, Operations

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS

STATE OF VERMONT)
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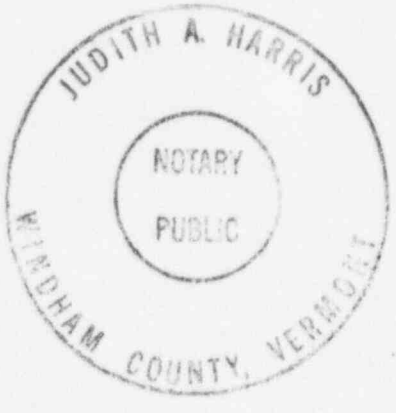
WINDHAM COUNTY)

Then personally appeared before me, Donald A. Reid, 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.



Judith A. Harris, Notary Public
My Commission expires February 10, 1999