Entergy Nuclear Operations, Inc.
Vermont Yankee
P.O. Box 0500
185 Old Ferry Road
Brattleboro, VT 05302-0500
Tel 802 257 5271

October 18, 2007
BVY 07-063

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

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Technical Specifications Proposed Change No. 275
Primary Containment Oxygen Concentration and Drywell-to-Suppression Chamber Differential Pressure Limits

Dear Sir or Madam;

Pursuant to 10CFR50.90, Entergy Nuclear Operations, Inc. (Entergy) is requesting to amend Operating License DPR-28 for Vermont Yankee Nuclear Power Station. The proposed changes would revise the Operating License Technical Specifications (TS) applicability requirements related to primary containment oxygen concentration and drywell-to-suppression chamber differential pressure limits. The associated required actions are also revised to be consistent with exiting the applicability for each specification.

These changes are consistent with the analyses and bases contained in NUREG-1433, Revision 3, "Standard Technical Specifications, General Electric Plants, BWR/4" and changes previously approved by the NRC for other boiling water reactors.

Entergy has reviewed the proposed amendment in accordance with 10CFR50.92 and concludes it does not involve a significant hazards consideration.

Attachment 1 to this letter provides an evaluation of the proposed change. Attachment 2 to this letter contains the markup of the current Technical Specifications pages. Attachment 3 contains the retyped Technical Specification pages.

Entergy requests approval of the proposed amendment by August 1, 2008 with a 60 day implementation to support our 2008 refueling outage.

A001

NRR

If you have any questions on this transmittal, please contact Mr. David Mannai (802) 258-5422.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 18, 2007.

Sincerely,

Ted A. Sullivan
Site Vice President
Vermont Yankee Nuclear Power Station

Attachment 1: Evaluation of the Proposed Change.
Attachment 2: Markup of the Current Technical Specifications pages
Attachment 3: Retyped Technical Specification pages

cc: Mr. Samuel J. Collins (w/o attachments)
Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. James S. Kim, Project Manager
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop O8C2A
Washington, DC 20555

USNRC Resident Inspector
Entergy Nuclear Vermont Yankee, LLC
P.O. Box 157
Vernon, Vermont 05354

Mr. David O'Brien, Commissioner
VT Department of Public Service
112 State Street – Drawer 20
Montpelier, Vermont 05620-2601

Attachment 1

Vermont Yankee Nuclear Power Station

Proposed Change 275

Evaluation of the Proposed Change

1. Description

Entergy Nuclear Operations, Inc. (Entergy) is requesting to amend Operating License DPR-28 for Vermont Yankee Nuclear Power Station (VY). The proposed changes would revise the Operating License Technical Specifications (TS) applicability requirements related to primary containment oxygen concentration and drywell-to-suppression chamber differential pressure limits. The associated required actions are also revised to be consistent with exiting the applicability for each specification. Current requirements present inconsistent guidance by stating differing conditions for the requirements and for conditions to be met if the limits are not restored.

These changes result in consistency with NUREG-1433 Revision 3, "Standard Technical Specifications, General Electric Plants, BWR/4" and changes previously approved by the NRC for other boiling water reactors.

2. Proposed Changes

2.1 The following changes are proposed to TS Section 3.7.A.7 Oxygen Concentration and TS Section 3.7.A.9 Drywell/Suppression Chamber d/p:

CTS 3.7.A.7.a	Proposed TS 3.7.A.7.a
The primary containment atmosphere shall be reduced to less than 4 percent oxygen with nitrogen gas during reactor power operation with reactor coolant pressure above 90 psig, except as specified in Specification 3.7.A.7.b.	The primary containment atmosphere shall be reduced to less than 4 percent oxygen by volume with nitrogen gas while in the RUN MODE during the time period: i. From 24 hours after thermal power is greater than 15% rated thermal power following startup, to ii. 24 Hours prior to reducing thermal power to less than 15% rated thermal power prior to the next shutdown.
CTS 3.7.A.7.b Within the 24-hour period subsequent to placing the reactor in the Run mode following a shutdown, the containment atmosphere oxygen concentration shall be reduced to less than 4 percent and maintained in this condition. Deinerting may commence 24 hours prior to a shutdown.	Requirement Deleted

CTS	Proposed
CTS 3.7.A.8 If specification 3.7.A.1 through 3.7.A.7 cannot be met, an orderly shutdown shall be initiated immediately and the reactor shall be in a cold shutdown condition within 24 hours.	Proposed 3.7.A.8 If specification 3.7.A.1 through 3.7.A.6 cannot be met, an orderly shutdown shall be initiated immediately and the reactor shall be in a cold shutdown condition within 24 hours.
	Proposed 3.7.A.9 If Specification 3.7.A.7 cannot be met, and the primary containment oxygen concentration cannot be restored to less than 4% oxygen by volume within the subsequent 24 hour period, reactor thermal power shall be less than 15% rated thermal power within the next 8 hours.
CTS 3.7.A.9.a Differential pressure between the drywell and suppression chamber shall be maintained $\geq$ 1.7 psi except as specified in 3.7.A.9.b and 3.7.A.9.c below.	Proposed 3.7.A.10.a Differential pressure between the drywell and suppression chamber shall be maintained $\geq$ 1.7 psid while in the RUN MODE during the time period: i. From 24 hours after thermal power is greater than 15% rated thermal power following startup, to ii. 24 hours prior to reducing thermal power to less than 15% rated thermal power prior to the next shutdown, iii. Except as specified in 3.7.A.10.b.
CTS 3.7.A.9.b The $\geq$ 1.7 psi differential pressure shall be established within 24 hours of achieving operating pressure and temperature. The differential pressure may be reduced to < 1.7 psi 24 hours prior to commencing a cold shutdown.	Requirement deleted

CTS 3.7.A.9.d	Proposed 3.7.A.10.c
If the Specifications of 3.7.A.9.a cannot be met, and the differential pressure can not 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.	If Specification 3.7.A.10.a cannot be met, and the differential pressure can not be restored within the subsequent 8 hours period, reactor thermal power shall be less than 15% rated thermal power within the next 12 hours.

The following administrative changes are made as a result of the technical changes identified above:

1) CTS 3.7.A.9 becomes 3.7.A.10 because of the creation of a new 3.7.A.9
2) CTS 3.7.A.9.c becomes 3.7.A.10.b due to the deletion of specification 3.7.A.9.b and the creation of a new 3.7.A.9 and 3.7.A.10
3) CTS 3.7.A.9.d becomes 3.7.A.10.c due to the deletion of specification 3.7.A.9.b and the creation of a new 3.7.A.9 and 3.7.A.10
4) <1.7 psi is changed to < 1.7 psid in CTS 3.7.A.9.c (proposed 3.7.A.10.b) for consistency with other proposed specifications and consistency with Nureg-1433, Revision 3, "Technical Specifications, General Electric Plants BWR/4"
5) CTS 4.7.A.9 becomes 4.7.A.10 to be consistent with the change in CTS 3.7.A.9 to 3.7.A.10

3. Background

The proposed changes do not affect containment design limits, plant equipment parameters or basic operational considerations for which the current TS are required. The change will affect the time when the TS limits are applicable to allow for critical inspections and maintenance activities. The current TS already include operational flexibility realizing that the probability of an accident during these short periods of time is low and that the plant has vent and purge capabilities while at power. The proposed changes marginally extend the operational flexibility in order to enhance overall plant safety.

3.1 Containment Inerting

The requirement to inert the VY containment resulted from a recommendation by the Advisory Committee on Reactor Safeguards during initial plant licensing. Subsequent to this, the requirement to inert BWR containments was incorporated into the code of federal regulations as 10CFR50.44.

The concern is that, in the unlikely event of a Loss-of-Coolant Accident (LOCA) with degraded Emergency Core Cooling System Performance, hydrogen could be generated within the primary containment either by radiolytic decomposition of the reactor cooling

water or by chemical reaction between the coolant and the overheated zirconium fuel rod cladding. If hydrogen and oxygen are available in sufficient quantities, combustion of the hydrogen could occur at rates rapid enough to lead to a significant pressure increase in the containment. To prevent this, the VY containment is inerted with nitrogen gas and the containment atmosphere is maintained less that 4 percent oxygen by volume.

The proposed change affects the period of time that the containment needs to be inerted, consistent with NUREG-1433, Revision 3, "Standard Technical Specifications, General Electric Plants, BWR/4." Also, the associated required actions are also revised to be consistent with exiting the applicability for this specification.

3.2 Containment Differential Pressure

The VY primary containment consists of a drywell and connected pressure suppression chamber. Large vent pipes form a connection between the drywell and the pressure suppression chamber. A total of eight circular vent pipes are provided, each having a diameter of 6.75 ft. The drywell vents are connected to a vent header which is contained within the airspace of the suppression chamber. Projecting downward from the header are 96 downcomer pipes, each 24 inches in diameter, terminating below the water surface in the suppression chamber.

During the late 1970s and early 1980s, in response to NUREG-0661, VY re-evaluated and modified the suppression chamber as part of the Mark 1 Containment Program. As part of the Mark 1 Containment Program, the suppression chamber, vent pipes and vent headers were braced to withstand expected loads from steam blowdown into the suppression chamber. The testing performed in support of the Mark 1 Containment Program, demonstrated that maintaining a drywell to suppression chamber pressure differential, to keep the suppression chamber downcomer legs clear of water, significantly reduced suppression chamber post design basis LOCA hydrodynamic loads. The effect of this pressure differential and reduced downcomer water leg permits the downcomers to clear earlier in the LOCA with resultant lower drywell pressure. It also reduces both the downward and upward pressure loads on the suppression chamber.

Based on this, the VY TS require that a differential pressure of greater than or equal to 1.7 psid be maintained while the plant is in operation. The maintenance of drywell to suppression chamber differential pressure of at least 1.7 psid and a suppression chamber water level corresponding to a downcomer submergence of approximately 4 1/2 feet assures the integrity of the primary containment is maintained.

The proposed change affects the period of time that the containment needs to be inerted to be consistent with NUREG-1433, Revision 3, "Standard Technical Specifications, General Electric Plants, BWR/4" and an approved precedent. Also the associated required actions are also revised to be consistent with exiting the applicability for each specification.

4. Technical Analysis

4.1 Primary containment oxygen concentration

The existing TS (3.7.A.7.a and 3.7.A.7.b) define when the primary containment oxygen concentration limit must be met. TS 3.7.A.7.a and 3.7.A.7.b state;

TS 3.7.A.7.a;

"The primary containment atmosphere shall be reduced to less than 4 percent oxygen with nitrogen gas during reactor power operation with reactor coolant pressure above 90 psig, except as specified in Specification 3.7.A.7.b."

TS 3.7.A.7.b;

"Within the 24-hour period subsequent to placing the reactor in the Run mode following a shutdown, the containment atmosphere oxygen concentration shall be reduced to less than 4 percent and maintained in this condition. Deinerting may commence 24 hours prior to a shutdown."

The applicability statements in these two specifications use inconsistent terminology. For example TS 3.7.A.7.a defines applicability as "during reactor power operation with reactor coolant pressure above 90 psig" whereas TS 3.7.A.7.b defines applicability in terms of time from being in the "Run mode following a shutdown" and in terms of a time frame "prior to a shutdown."

The proposed change revises the applicability statements to be consistent with the wording in NUREG-1433, Rev.3 "Standard Technical Specifications, General Electric Plants, BWR/4." This combines the two specifications into a single specification that provides consistent applicability statements. In addition, the associated required actions are also revised to be consistent with exiting the applicability for each specification.

The first portion of CTS 3.7.A.7.b, "Within the 24 hour period subsequent to placing the reactor in the Run mode following a shutdown" is revised to "From 24 hours after thermal power is greater than 15% rated thermal power following a startup." (Note that "following a startup" rather than the existing "following a shutdown" reflects an editorial preference consistent with NUREG-1433 wording with no change in intent.)

The second portion of CTS 3.7.A.7.b, "Deinerting may commence 24 hours prior to a shutdown" is revised to "to 24 hours prior to reducing thermal power to less than 15% rated thermal power prior to the next shutdown."

This relaxes the initiation of the 24-hour period such that it is tied to achieving 15% rated thermal power starting up or shutting down, as applicable, rather than initiating the 24-hour period at the currently required point of entering the Run Mode or a reactor shutdown.

The existing applicability is based on assuring that the containment is inerted as soon as practical when the plant is running at operating pressure and temperature (period when plant could be challenged by a LOCA).The average power range monitor (APRM) scram function set-point is based on the reactor mode switch being in or out of "Run Mode". When not in "Run," TS Table 3.1.1 requires a scram setting of $\leq$ 15% power. Since this reactor power level reflects the upper bound on the existing startup applicability utilizing this power level as the proposed applicability limit does not result in any significant technical change.

Specifying the applicability based on power level versus the reactor mode switch position, will allow operators to place the reactor mode switch in the Run position sooner during startups. This will reduce the probability of spurious startup neutron monitoring instrumentation scrams and allow additional time for plant personnel to perform the necessary maintenance, inspection and testing activities in the primary containment. As such, this change will also indirectly allow an increase in overall plant reliability.

The minimal increase in allowed time prior to requiring that the primary containment oxygen concentration limit be established provides additional operational flexibility, which is chosen to be consistent with applicability requirements for primary containment oxygen concentration in the Standard TS. During startup and shutdown periods various maintenance, inspection and testing activities (e.g., main steam isolation valve (MSIV) testing, MSIV limit switch adjustments, motor-operated valve testing, and in-service leak and hydrostatic test inspections and repairs) require access to the primary containment. For personnel protection and efficiency in timely completion of these activities, a de-inerted atmosphere is necessary.

4.2 Drywell-to-suppression chamber differential pressure

The existing TS (3.7.A.9.a and 3.7.A.9.b) define when the differential pressure limit must be met. TS 3.7.A.9.a and 3.7.A.9.b state;

TS 3.7.A.9.a:

Differential pressure between the drywell and suppression chamber shall be maintained $\geq$ 1.7 psi except as specified in 3.7.A.9.b and 3.7.A.9.c below.

TS 3.7.A.9.b:

The $\geq$ 1.7 psi differential pressure shall be established within 24 hours of achieving operating pressure and temperature. The differential pressure may be reduced to < 1.7 psi 24 hours prior to commencing a cold shutdown.

TS 3.7.A.9.c: This TS is unchanged except for renumbering and a change from psi to psid for consistency.

The applicability statements in these specifications use terminology that is subject to interpretation. For example, the first part of TS 3.7.A.9.b defines applicability to "within 24 hours of achieving operating temperature and pressure" and the second part defines

applicability in terms of "24 hours prior to commencing a cold shutdown." These statements leave the licensee to define what constitutes "operating temperature and pressure" and to selecting a timeframe for "commencing a cold shutdown."

The proposed change revises the applicability statements to be consistent with the wording in NUREG-1433, Revision 3. "Standard Technical Specifications, General Electric Plants, BWR/4." This combines the two specifications into a single specification that provides consistent applicability statements. Also the associated required actions are also revised to be consistent with exiting the applicability for this specification.

The first portion of CTS 3.7.A.9.b, "...within 24 hours of achieving operating pressure and temperature" is revised to "From 24 hours after thermal power is greater than 15% rated thermal power following a startup."

The second portion of CTS 3.7.A.9.b, "the differential pressure may be reduced to < 1.7 psi 24 hours prior to commencing a cold shutdown" is revised to "24 hours prior to reducing thermal power to less than 15% rated thermal power prior to the next shutdown."

This proposed change changes the initiation of the 24-hour period such that it is tied to achieving 15% rated thermal power when starting up or shutting down, as applicable, rather than the currently required point of achieving operating temperature and pressure or commencing a plant shutdown.

The existing applicability is based on assuring that differential pressure is established as soon as possible when the plant is running at operating pressure and temperature (period when plant could be challenged by a LOCA). The average power range monitor (APRM) scram function setpoint is based on the reactor mode switch being in or out of "Run." When not in "Run," TS Table 3.1.1 requires a scram setting of $\leq$ 15% power. Since this reactor power level reflects the upper bound on the existing applicability timing, utilizing this power level as the proposed applicability limit does not result in any significant technical change.

Specifying the applicability based on power level versus the reactor operating parameters will allow operators to place the reactor mode switch in the Run position sooner during startups. This will reduce the probability of spurious startup neutron monitoring instrumentation scrams and allow additional time for plant personnel to perform the necessary maintenance, inspection and testing activities in the primary containment. As such, this change will also indirectly allow an increase in overall plant reliability.

The minimal increase in allowed operating time prior to requiring that the drywell-to-suppression chamber differential pressure limit be met provides additional operational flexibility, which is also chosen to be consistent with applicability requirements for primary containment oxygen concentration. During startup and shutdown periods various maintenance, inspection and testing activities (e.g., main steam isolation valve (MSIV) testing, MSIV limit switch adjustments, motor-operated valve testing, and in-service leak and hydrostatic test inspections, and repairs) require access to the primary containment. For personnel protection and efficiency in timely completion of these

activities, a de-inerted atmosphere is necessary. The process of inerting and de-inerting involves nearly continuous feeding and bleeding of the primary containment and suppression pool atmospheres to reduce oxygen concentration with nitrogen addition. This precludes the ability to maintain the drywell-to-suppression pool differential pressure.

5. Regulatory Safety Analysis

5.1 No Significant Hazards Consideration

Entergy Nuclear Operations, Inc. (Entergy) is proposing to modify the Vermont Yankee Technical Specifications (TS) applicability requirements and action statements related to primary containment oxygen concentration and drywell-to-suppression chamber differential pressure limit specifications.

These changes address inconsistent applicability requirements and revise the requirements to be consistent with NUREG-1433, Revision 3, "Standard Technical Specifications, General Electric Plants, BWR/4." The change proposes consistent applicability and action statement requirements for timeframes associated with inerting the Primary Containment and establishing containment differential pressure. The change proposes that inerting and differential pressure be established within 24 hours after thermal power is greater than 15% rated thermal power following a startup and 24 hours prior to reducing power to less than 15% rated thermal power prior to the next shutdown. Time frames are provided for restoring the plant to these specifications or being in cold shutdown.

Entergy has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No. The proposed change does not increase the probability of an accident since it does not involve the modification of any plant equipment or affect how plant systems or components are operated, it only changes the requirements for when inerting and differential pressure need to be established. Whether the containment is inerted or differential pressure is established does not impact the likelihood of an accident previously evaluated. Therefore, the proposed change does not involve a significant increase in the probability of an accident previously evaluated.

   The technical limits (i.e., oxygen concentration and differential pressure) imposed by the associated Technical Specifications remain unchanged. Brief periods where the requirements for maintaining these technical limits are relaxed are currently considered in the Technical Specifications and associated licensing basis. The proposed change clarifies the definition of these periods however, any changes are not considered significant and are supported by remaining consistent with the

recommended allowances of NUREG 1433, Revision 3. The consequences of analyzed events are therefore not affected. Therefore, the proposed change does not involve a significant increase in the consequences of an accident previously evaluated.

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

   Response: No. The proposed change does not involve any physical alteration of plant equipment and does not change the method by which any safety-related system performs its function. As such, no new or different types of equipment will be installed, and the basic operation of installed equipment is unchanged. The methods governing plant operation and testing remain consistent with current safety analysis assumptions. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   Response: No. The proposed change does not involve the modification of any plant equipment or affect basic plant operation. Additionally, the associated limitations remain unchanged. These changes do not negate any existing requirement, and do not adversely affect existing plant safety margins or the reliability of the equipment assumed to operate in the safety analysis. As such, there are no changes being made to safety analysis assumptions, safety limits or safety system settings that would adversely affect plant safety as a result of the proposed change.

   The revised plant conditions reflecting the applicability and the duration allowed to restore limits are not credited in any design basis event. These changes do not reflect any significant adverse impact to the overall risk of operating during brief periods without the required primary containment oxygen concentration or differential pressure since the total time for any occurrence is only marginally extended and reflects times consistent with NUREG-1433, Revision 3. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

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

5.2 Environmental Consideration

A review has determined that the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to be prepared in connection with the proposed amendment.

6. Precedents

The NRC has approved (Reference 2) similar changes to the applicability and required actions for the primary containment oxygen concentration and the drywell-to-suppression chamber differential pressure.

7. References

1. NUREG-1433, Rev. 3, "Standard Technical Specifications, General Electric Plants, BWR/4"

2. Pilgrim Nuclear Power Plant Amendment No. 218, dated April 10, 2006 (TAC No. MC7056)

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Change 275

Marked-up Technical Specification Pages

INSERT 1

The primary containment atmosphere shall be reduced to less than 4 percent oxygen by volume with nitrogen gas while in the RUN MODE during the time period:

i. From 24 hours after thermal power is greater than 15% rated thermal power following startup, to
ii. 24 Hours prior to reducing thermal power to less than 15% rated thermal power prior to the next shutdown.

INSERT 2

If Specification 3.7.A.7 cannot be met, and the primary containment oxygen concentration cannot be restored to less than 4% oxygen by volume within the subsequent 24 hour period, reactor thermal power shall be less than 15% rated thermal power within the next 8 hours.

INSERT 3

Differential pressure between the drywell and suppression chamber shall be maintained $\geq$ 1.7 psid while in the RUN MODE during the time period:

i. From 24 hours after thermal power is greater than 15% rated thermal power following startup, to
ii. 24 hours prior to reducing thermal power to less than 15% rated thermal power prior to the next shutdown,
iii. Except as specified in 3.7.A.10.b.

INSERT 4

If Specification 3.7.A.10.a cannot be met, and the differential pressure can not be restored within the subsequent 8 hour period, reactor thermal power shall be less than 15% rated thermal power within the next 12 hours.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
(3) The position alarm system will annunciate in the control room if the valve opening exceeds the equivalent of 0.05 inch at all points along the seal surface of the disk.	If deficiencies are found such that Specification 3.7.A.6 could not be met, all vacuum breakers shall be inspected and deficiencies corrected.
b. Up to two (2) of the ten (10) suppression chamber - drywell vacuum breakers may be determined to be inoperable provided that they are secured, or known to be, in the closed position.	(3) A drywell to suppression chamber leak rate test shall demonstrate that with an initial differential pressure of not less than 1.0 psi, the differential pressure decay rate shall not exceed the equivalent of the leakage rate through a 1-inch orifice.
c. Reactor operation may continue for fifteen (15) days provided that at least one position alarm circuit for each vacuum breaker is operable and each suppression chamber - drywell vacuum breaker is physically verified to be closed immediately and daily thereafter.	
7. Oxygen Concentration	7. Oxygen Concentration
a. The primary containment atmosphere shall be reduced to less than 4 percent oxygen with nitrogen gas during reactor power operation with reactor coolant pressure above 90 psig, except as specified in Specification 3.7.A.7.b.	The primary containment oxygen concentration shall be measured and recorded on a weekly basis.

INSERT 1 →

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
b. Within the 24-hour period subsequent to placing the reactor in the Run mode following a shutdown, the containment atmosphere oxygen concentration shall be reduced to less than 4 percent and maintained in this condition. Deinerting may commence 24 hours prior to a shutdown.	
8. If Specification 3.7.A.1 through 3.7.A.6 cannot be met, an orderly shutdown shall be initiated immediately and the reactor shall be in a cold shutdown condition within 24 hours.	
9. Drywell/Suppression Chamber d/p	9. Drywell/Suppression Chamber d/p
a. Differential pressure between the drywell and suppression chamber shall be maintained ≥1.7 psi except as specified in 3.7.A.9.b and 3.7.A.9.c below.	a. The differential pressure between the drywell and suppression chamber shall be recorded once per shift.
b. The ≥1.7 psi differential pressure shall be established within 24 hours of achieving operating pressure and temperature. The differential pressure may be reduced to <1.7 psi 24 hours prior to commencing a cold shutdown.	b. The operability of the low differential pressure alarm shall be verified once per week.
c. The differential pressure may be reduced to <1.7 psi for a maximum of four hours (period to begin when the	

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.
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	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 7.1 kW.

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Change 274

Re-typed TS Pages

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
(3) The position alarm system will annunciate in the control room if the valve opening exceeds the equivalent of 0.05 inch at all points along the seal surface of the disk.	If deficiencies are found such that Specification 3.7.A.6 could not be met, all vacuum breakers shall be inspected and deficiencies corrected.
b. Up to two (2) of the ten (10) suppression chamber - drywell vacuum breakers may be determined to be inoperable provided that they are secured, or known to be, in the closed position.	(3) A drywell to suppression chamber leak rate test shall demonstrate that with an initial differential pressure of not less than 1.0 psi, the differential pressure decay rate shall not exceed the equivalent of the leakage rate through a 1-inch orifice.
c. Reactor operation may continue for fifteen (15) days provided that at least one position alarm circuit for each vacuum breaker is operable and each suppression chamber - drywell vacuum breaker is physically verified to be closed immediately and daily thereafter.	
7. Oxygen Concentration	7. Oxygen Concentration
a. The primary containment atmosphere shall be reduced to less than 4 percent oxygen by volume with nitrogen gas while in the RUN MODE during the time period:	The primary containment oxygen concentration shall be measured and recorded on a weekly basis.
i. From 24 hours after thermal power is greater than 15% rated thermal power following startup, to	

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
ii. 24 Hours prior to reducing thermal power to less than 15% rated thermal power prior to the next shutdown.	
8. If Specification 3.7.A.1 through 3.7.A.6 cannot be met, an orderly shutdown shall be initiated immediately and the reactor shall be in a cold shutdown condition within 24 hours.	
9. If Specification 3.7.A.7 cannot be met, and the primary containment oxygen concentration cannot be restored to less than 4% oxygen by volume within the subsequent 24 hour period, reactor thermal power shall be less than 15% rated thermal power within the next 8 hours.	
10. Drywell/Suppression Chamber d/p	10. Drywell/Suppression Chamber d/p
a. Differential pressure between the drywell and suppression chamber shall be maintained $\geq$1.7 psid while in the RUN MODE during the time period:	a. The differential pressure between the drywell and suppression chamber shall be recorded once per shift.
i. From 24 hours after thermal power is greater than 15% rated thermal power following startup, to	
ii. 24 hours prior to reducing thermal power to less than 15% rated thermal power prior to the next shutdown,	b. The operability of the low differential pressure alarm shall be verified once per week.
iii. Except as specified in 3.7.A.10.b.	

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
b. The differential pressure may be reduced to <1.7 psid for a maximum of four hours (period to begin when the 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.	
c. If Specification 3.7.A.10.a cannot be met, and the differential pressure cannot be restored within the subsequent eight hour period, reactor thermal power shall be less than 15% rated thermal power within the next 12 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.
b. Except as specified in Specification 3.7.B.3.b below, whenever the reactor is in Refuel Mode or Cold Shutdown	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 7.1 kW.