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Christopher J. Wamser
Site Vice President

BVY 12-055

August 7, 2012

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

SUBJECT: Technical Specifications Proposed Change 297, Supplement 1
Response to Request for Additional Information
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

REFERENCES:
1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Technical Specification Proposed Change No. 297 Suppression Chamber-Drywell Leak Rate Test Surveillance Frequency Change," BVY 12-005, dated February 1, 2012

Dear Sir or Madam:

In Reference 1, Entergy Nuclear Operations, Inc. (Entergy) submitted a request for an amendment to the renewed operating license Technical Specifications (TS) for Vermont Yankee (VY) requesting change to the TS related to the drywell to suppression chamber vacuum breakers.

Attachment 1 to this submittal provides Entergy's response to questions provided by NRC staff and Attachment 2 provides revised TS and TS Bases pages reflecting the changes proposed to address NRC questions. The TS Bases page is provided for information only.

This supplement to the original license amendment request does not change the scope or conclusions in the original application, nor does it change Entergy's determination of no significant hazards consideration.

There are no new regulatory commitments being made in this letter.

Should you have any questions concerning this letter or require additional information, please contact Robert Wanczyk at 802-451-3166.

A001
NRR

I declare under penalty of perjury that the foregoing is true and correct.
Executed on August 7, 2012.

Sincerely,

CJW/jmd

Attachments: 1. Response to Request for Additional Information
2. Retyped Technical Specifications and Bases Pages

cc: William M. Dean
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Attachment 1

Proposed Change 297, Supplement 1

Response to Request for Additional Information

Response to Requests for Additional Information (RAIs)

RAI Number 1

The LAR proposes to revise the technical specification (TS) to perform the drywell-to suppression chamber leakage test during unit operation instead of performing it during refueling outage. The rationale provided in the LAR states: "This would allow performance of the test just prior to a refuel outage to confirm the operability of the pressure suppression function of the primary containment and assess the need for maintenance during the refueling outage." Accordingly, the proposed change should be to perform the test just prior (e.g., within a day) to the refueling outage. Please provide reasons for the change to perform the test at any time during the power operation cycle.

Response

The intent of the proposed change was to allow testing anytime during the operating cycle (OC) or during the refuel outage (RFO). Per Vermont Yankee (VY) TS Definition M, the RFO is part of the OC. Our plans, should we elect to perform during the OC would be to perform the surveillance just prior to shutdown to minimize the risk of a forced shutdown and use the information from the test to assess the need for additional maintenance during the outage. There is no technical reason for the timing of the surveillance which could be performed at any time during the OC (with the 25% interval flexibility). Entergy did not intend to limit performance of the surveillance to just prior to the RFO and thus prevent us from performing during the RFO. Performance during the RFO may be necessary if work is scheduled to be performed on the vacuum breakers and the surveillance needs to be performed as a post maintenance test. NUREG-1433 "Standard Technical Specifications General Electric Plants, BWR/4," requires the surveillance every 18 months and even though the Basis states " the 18 month Frequency was developed considering it is prudent that this surveillance be performed during a unit outage..." it is not a requirement of the NUREG that the surveillance be performed when shutdown. NUREG-1433 also includes a retest frequency of 9 months should there be two consecutive test failures which would require online testing.

Based on this, no revision to the proposed change is deemed necessary.

RAI Number 2

Attachment 1, refers to NUREG-1433 "Standard Technical Specifications General Electric Plants, BWR/4," Volume 1, Revision 3, Volume 2 of NUREG-1433, "Bases" provides a basis for the surveillance requirement (SR) 3.6.1.1.2 (i.e., performing the drywell-to-suppression chamber leakage test during unit outage). It states that the 18-month frequency was developed considering that this surveillance be performed during a unit outage; and also, in view of the fact that if the test failed, the component failures that might have affected this test are identified by other primary containment SRs. The TS does allow a same subsequent SR test (after a test that failed during a unit outage and components were repaired and a successful test was performed during the outage) to verify the containment performance and assure the components that were repaired are performing satisfactorily. As proposed, if this SR test is performed during unit operation and it were to fail, please explain how the component(s) that led to the test failure would be identified?

Response

The Basis for SR 3.6.1.1.2 in NUREG-1433 states "the 18-month Frequency was developed considering it is prudent that this surveillance be performed during a unit outage and also in view of the fact that component failures that might have affected this test are identified by other primary containment SRs."

This statement indicates that it is prudent because performing the surveillance during the outage eliminates the potential for an unnecessary shutdown due to a loss of primary containment integrity and also that outage testing (e.g., 10 CFR 50.55a Inservice testing, 10 CFR 50 Appendix J testing) may repair components in advance of the test and make a successful test more likely.

If the surveillance fails with the plant operating, the plant would be shutdown, the Corrective Action Program (CAP) entered and the cause of the failure determined. If the surveillance fails with the plant shutdown, the CAP will be entered and the cause of the failure determined. In both cases the cause is identified and corrected. Additionally, if the surveillance fails, a retest would be performed to verify that the primary containment was operable prior to start-up.

Based on this, no revision to the proposed change is deemed necessary.

RAI Number 3

In the case that the SR test as proposed in SR 4.7.A.6.c were to fail when performed during unit operation, the containment would become inoperable. The NRC staff notes that there are no proposed actions as part this specification that prescribes required actions to be taken under this condition. Please propose the "Action" that is required to be taken under the limiting condition for operation.

Response

VY agrees with this observation. NUREG 1433 includes this SR in Section 3.6.1.1 "Primary Containment" where the VY custom TS include the SR in TS Section 4.7.A.6 related to vacuum breaker testing requirements.

To address this VY proposes to relocate the SR to Section 4.7.A.2 to coincide with the primary containment requirements of the TS. Therefore, should the test fail, TS 3.7.A.2 would not be satisfied and TS 3.7.A.8 would be entered as the action statement. Attachment 2 provides revised TS pages reflecting this change.

RAI Number 4

The Standard Technical Specifications (STS) NUREG-1433 Volume 2, "Bases" for SR 3.6.1.1.2 notes that two consecutive test failures would indicate unexpected containment degradation; requiring an increased surveillance frequency, until the situation is remedied as evidenced by passing two consecutive tests. The STS Volume 1, SR 3.6.1.1.2 requires the test to be performed at an increased frequency of nine (9) month frequency until two consecutive tests pass. Please explain why the increased surveillance frequency requirement of the STS not included in the proposed amendment.

Response

VY agrees and proposes to add the STS surveillance requirement to the proposed change. Attachment 2 provides revised TS and TS Bases pages reflecting this change.

Attachment 2

Proposed Change 297, Supplement 1

Retyped Technical Specification and Bases Pages

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
at normal cooldown rates if the torus water temperature exceeds 120°F.	
e. Minimum Water Volume - 68,000 cubic feet	
f. Maximum Water Volume - 70,000 cubic feet	
2. Primary containment integrity shall be maintained at all times when the reactor is critical or when the reactor water temperature is above 212°F and fuel is in the reactor vessel except while performing low power physics tests at atmospheric pressure at power levels not to exceed 5 Mw(t).	2. Primary Containment Surveillances
	a. The primary containment integrity shall be demonstrated as required by the Primary Containment Leakage Rate Testing Program (PCLRTP).
	b. At least once per Operating Cycle, 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. Should there be two consecutive test failures the test frequency shall be changed to once every 9 months until two consecutive tests pass.
3. If a portion of a system that is considered to be an extension of primary containment is to be opened, isolate the affected penetration flow path by use of at least one closed and deactivated automatic valve, closed manual valve or blind flange.	3. (Blank)
4. Whenever primary containment integrity is required:	4. In accordance with the PCLRTP, verify that the following leakage rates are within acceptable limits:
a. The leakage rate from any one main steam isolation valve (MSIV) shall not exceed 62 scfh at 44 psig (Pa);	a. The leakage rate through each MSIV;
b. The combined leakage rate from the main steam pathways shall not exceed 124 scfh at 44 psig (Pa); and	b. The combined leakage rate for the main steam pathways; and
c. The combined leakage rate from the secondary containment bypass pathways shall not exceed 5 scfh at 44 psig (Pa).	c. The combined leakage rate for the secondary containment bypass pathways.

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
line is verified to be closed and conditions required by 3.7.D.2 are met.	
6. Pressure Suppression Chamber - Drywell Vacuum Breakers	6. Pressure Suppression Chamber - Drywell Vacuum Breakers
a. When primary containment is required, all suppression chamber - drywell vacuum breakers shall be operable except during testing and as stated in Specifications 3.7.A.6.b and c, below. Suppression chamber - drywell vacuum breakers shall be considered operable if:	a. Periodic Operability Tests Operability testing of the vacuum breakers shall be in accordance with Specification 4.6.E and within 12 hours after any discharge of steam to the suppression chamber from the safety/relief valves and within 12 hours following an operation that causes any of the vacuum breakers to open. Operability of the corresponding position switches and position indicators and alarms shall be verified monthly and following any maintenance.
(1) The valve is demonstrated to open fully with the applied force at all valve positions not exceeding that equivalent to 0.5 psi acting on the suppression chamber face of the valve disk.	b. Refueling Outage Test (1) All suppression chamber - drywell vacuum breaker position indication and alarm systems shall be calibrated and functionally tested.
(2) The valve can be closed by gravity, when released after being opened by remote or manual means, to within not greater than the equivalent of 0.05 inch at all points along the seal surface of the disk.	(2) Deleted

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.	(3) Deleted
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.	
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	

BASES: 4.7 (Cont'd)

Each operating cycle, a leak rate test shall be performed to verify that significant leakage flow paths do not exist between the drywell and suppression chamber. The drywell pressure will be increased by at least 1 psi with respect to the suppression chamber pressure and held constant. The 2 psig set point will not be exceeded. The subsequent suppression chamber pressure transient (if any) will be monitored with a sensitive pressure gauge. If the drywell pressure cannot be increased by 1 psi over the suppression chamber pressure it would be because a significant leakage path exists; in this event the leakage source will be identified and eliminated before power operation is resumed. If the drywell pressure can be increased by 1 psi over the suppression chamber the rate of change of the suppression chamber pressure must not exceed a rate equivalent to the rate of leakage from the drywell through a 1-inch orifice. In the event the rate of change exceeds this value then the plant will be shut down, if operating, the source of leakage will be identified and eliminated before power operation is resumed. Two consecutive test failures, however, would indicate unexpected primary containment degradation; in this event, increasing the frequency to once every 9 months is required until the situation is remedied as evidenced by passing two consecutive tests.

The drywell-suppression chamber vacuum breakers are exercised in accordance with Specification 4.6.E, following termination of discharge of steam into the suppression chamber from the safety/relief valves and following any operation that causes the vacuum breakers to open. This monitoring of valve operability is intended to assure that valve operability and position indication system performance does not degrade between refueling inspections. When a vacuum breaker valve is exercised through an opening-closing cycle, the position indicating lights are designed to function as follows:

Full Closed (Closed to $\leq$0.050" open)	2 White - On
Open (>0.050" open to full open)	2 White - Off

Experience has shown that a weekly measurement of the oxygen concentration in the primary containment assures adequate surveillance of the primary containment atmosphere.

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

Initiating reactor building isolation and operation of the standby gas treatment system to maintain at least a 0.15 inch of water vacuum within the secondary containment provides an adequate test of the operation of the reactor building isolation valves, leakage tightness of the reactor building, and performance of the standby gas treatment system. The testing of reactor building automatic ventilation system isolation valves in accordance with Technical Specification 4.6.E demonstrates the operability of these valves. In addition, functional testing of initiating sensors and associated trip channels demonstrates the capability for automatic actuation. Periodic testing gives sufficient confidence of reactor building integrity and standby gas treatment system performance capability.