Entergy

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February 24, 2009
BVY 09-012

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. 282
Revision of Drywell Vacuum Breaker Surveillance Requirements

Dear Sir or Madam,

In accordance with 10CFR50.90, Entergy Nuclear Operations, Inc. (ENO) is proposing to amend Operating License DPR-28 for Vermont Yankee Nuclear Power Station (VY). The proposed change would modify the VY Technical Specifications (TS) Surveillance Requirement (SR) that governs operability testing of the pressure suppression chamber-drywell vacuum breakers to incorporate the SR contained within the Standard Technical Specifications (STS), NUREG-1433 and delete the SR that requires inspection of the pressure suppression chamber-drywell vacuum breakers. Periodic inspections of the pressure suppression chamber-drywell vacuum breakers are not required by the STS.

ENO has reviewed the proposed amendment in accordance with 10CFR50.92 and concludes it does not involve a significant hazards consideration. In accordance with 10CFR50.91, a copy of this application, with attachments, is being provided to the State of Vermont, Department of Public Service.

Attachment 1 to this letter provides a detailed description and evaluation of the proposed change. Attachment 2 contains a markup of the current TS and Bases pages. Attachment 3 contains the retyped TS and Bases pages. TS Bases pages are provided for information only.

ENO requests review and approval of the proposed license amendment by March 1, 2010 and a 60 day implementation period from the date of the amendment approval.

There are no new regulatory commitments made in this letter.

If you have any questions on this transmittal, please contact Mr. David Mannai at 802-451-3304.

A001
NRR

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 24, 2009.

Sincerely,

For MJC

Michael J. Colomb
Site Vice President
Vermont Yankee Nuclear Power Station

Attachments
1. Description and Evaluation of the Proposed Changes
2. Markup of the Current Technical Specifications and Bases Pages
3. Retyped Technical Specifications and Bases Pages

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Attachment 1

Vermont Yankee Nuclear Power Station

Proposed Change 282

Description and Evaluation of Proposed Changes

I. PURPOSE OF THE PROPOSED CHANGES

The Vermont Yankee Nuclear Power Station (VY) Technical Specification (TS) Surveillance Requirement (SR) 4.7.A.6.a is being modified as follows;

SR 4.7.A.6.a is changed to modify the operability testing requirement following an energy release to the pressure suppression chamber. Current TS requires operability testing following any release of energy into the suppression pool. The proposed change modifies the TS to be consistent with NUREG-1433, Revision 3 (Reference (a)) by providing more specific guidance for when operability testing of the vacuum breakers is required. This change will ensure that vacuum breaker operability testing is performed whenever there is a significant enough energy release into containment that challenges the functionality of the vacuum breakers.

SR 4.7.A.6.b.(2) requires inspection of at least two pressure suppression chamber-drywell vacuum breakers during each refueling outage. The proposed change is to delete this SR. Periodic inspections of the pressure suppression chamber-drywell vacuum breakers are not required by Reference (a) and will be controlled by the VY Check Valve Condition Monitoring Program.

II. DESCRIPTION OF CHANGES

The proposed license amendment modifies the pressure suppression chamber-drywell vacuum breaker operability testing SR and deletes the SR to perform an inspection of at least two pressure suppression chamber-drywell vacuum breakers during each refueling outage.

Specifically, the changes proposed are:

1) Page 149, SR 4.7.A.6.a: This SR is being modified to replace the requirement to perform operability testing following any release of energy to the suppression chamber with the SR 3.6.1.8.2 requirements of Reference (a) to perform operability testing within 12 hours following the discharge of steam to the suppression chamber from the safety/relief valves or following an operation that causes any of the vacuum breakers to open.

2) Pages 149 and 150, SR 4.7.A.6.b.(2): This SR is being deleted.

Associated wording in the VY TS Bases (pages 168 and 169) will also be revised after approval of this change, under our TS Bases Control Program specified in VY TS 6.7.E. Changes to TS Bases are provided for information only.

III. SAFETY IMPLICATIONS OF THE PROPOSED CHANGE

The pressure suppression chamber-drywell vacuum breakers are part of the Primary Containment System. The safety objective of the Primary Containment System, in conjunction with core standby cooling systems, is to provide the capability, in the event of the postulated loss-of-coolant accident, to limit the release of fission products to the plant environs so that off-site doses would be well below the values specified in 10CFR50.67.
The design employs a Pressure Suppression Containment System which houses the reactor vessel, the reactor coolant recirculation loops, and other branch connections of the

Reactor Primary System. The Pressure Suppression System consists of a drywell, a pressure suppression chamber which stores a large volume of water, a connecting vent system between the drywell and the water pool, isolation valves, containment cooling systems, and other service equipment. In the event of a process system piping failure within the drywell, reactor water and steam would be released into the drywell air space. The resulting increased drywell pressure would then force a mixture of nitrogen, steam, and water through the vents into the pool of water which is stored in the suppression chamber. The steam would condense rapidly and completely in the suppression pool, resulting in rapid pressure reduction in the drywell. Nitrogen which is transferred to the suppression chamber pressurizes the chamber and is subsequently vented to the drywell to equalize the pressure between the two vessels.

The vent system, which connects the drywell and suppression chamber, conducts flow from the drywell to the suppression chamber without excessive resistance and distributes this flow effectively and uniformly in the pool following a postulated pipe rupture in the drywell. The suppression chamber receives this flow, condenses the steam portion, and contains non-condensable gases and fission products driven into the chamber.

The suppression chamber-to-drywell vacuum breakers limit the pressure differential between the drywell and suppression chamber so that the structural integrity of the containment is maintained, especially during post-accident containment cooling.

VY has ten (10) suppression chamber-to-drywell vacuum breakers. Per TS 3.7.A.6.b, up to two (2) of these may be determined to be inoperable provided that they are secured or known to be in the closed position.

Currently, SR 4.7.A.6.a requires performance of operability testing of the vacuum breakers "following any release of energy to the suppression chamber." This is considered to be overly conservative as the performance of RCIC surveillance testing leads to the release of energy into the suppression chamber, which in turn leads to the performance of the vacuum breaker operability test even when the vacuum breakers do not open. Replacing the "any release of energy" requirement with the requirements of Standard Technical Specification SR 3.6.1.8.2 to perform operability testing within twelve (12) hours after the discharge of steam into the suppression chamber from the safety/relief valves or following an operation that causes any of the vacuum breakers to open ensures that any challenges to the vacuum breakers will require subsequent operability testing.

Currently SR 4.7.A.6.b.(2) requires at least two (2) of the suppression chamber–drywell vacuum breakers to be inspected each refueling outage. A review of the vacuum breaker inspections performed since 1996 revealed no significant deficiencies that required entry into the VY Corrective Action Program. Based on this, mandatory periodic disassembly is considered unnecessary and results in unnecessary worker radiation exposure. The vacuum breakers will be included in VY's Check Valve Condition Monitoring Program, which was developed based on Reference (b). This will provide for condition monitoring and periodic disassembly and inspection as deemed necessary.

Operability testing of the suppression chamber-to-drywell vacuum breakers will continue to be performed on a quarterly basis in accordance with the VY Inservice Testing Program. Operability testing of the corresponding position switches and position indicators in accordance with SR 4.7.A.6.a will continue to be required on a monthly basis and following any maintenance. SRs 4.7.A.6.b.(1) and 4.7.A.6.b.(3) will remain unchanged.

The proposed amendment does not change any existing equipment operating requirements and does 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 amendment.

IV. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

The proposed license amendment modifies current Surveillance Requirement (SR) 4.7.A.6.a which requires operability testing of the pressure suppression chamber-drywell vacuum breakers by incorporating SR 3.6.1.8.2 of NUREG 1433 Revision 3 "Standard Technical Specifications General Electric Plants, BWR/4," dated March 2004. The revised SR will require operability testing within 12 hours after any discharge from the safety/relief valves and following operation that causes any of the vacuum breakers to open. In addition, the proposed license amendment deletes current SR 4.7.A.6.b.(2) to perform an inspection of at least two pressure suppression chamber-drywell vacuum breakers during each refueling outage. The vacuum breakers will be added to the Check Valve Condition Monitoring Program.

Pursuant to 10CFR50.92, Entergy Nuclear Operations, Inc. 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). These criteria require that 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. The discussion below addresses each of these criteria and demonstrates that the proposed amendment does not constitute a significant hazard.

The proposed change does not involve a significant hazards consideration because:

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

   The proposed amendment does not impact the operability of any structure, system or component that affects the probability of an accident or that supports mitigation of an accident previously evaluated. The proposed amendment does not affect reactor operations or accident analysis and has no radiological consequences. The operability requirements for accident mitigation systems remain consistent with the licensing and design basis. Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The operation of VY 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 amendment does not change the design or function of any component or system. No new modes of failure or initiating events are being introduced. Therefore, operation of VY in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The operation of VY in accordance with the proposed amendment will not involve a significant reduction in a margin of safety.

   The proposed amendment does not change the design or function of any component or system. The proposed amendment does not involve any safety limits, safety settings or safety margins. The ability of the pressure suppression chamber-drywell vacuum breakers to perform its intended function will continue to be required in accordance with the VY Technical Specifications.

   Since the proposed controls are adequate to ensure the operability of the pressure suppression chamber-drywell vacuum breakers, there will still be high assurance that the components are operable and capable of performing their respective functions. Therefore, operation of VY in accordance with the proposed amendment will not involve a significant reduction in the margin to safety.

V. ENVIRONMENTAL CONSIDERATIONS

This amendment request meets the eligibility criteria for categorical exclusion from environmental review set forth in 10CFR51.22(c)(9) as follows:

(i) The amendment involves no significant hazards determination.

As described in Section IV of this evaluation, the proposed change involves no significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed amendment does not involve any physical alterations to the plant configuration. The proposed change does not affect the operation of the pressure suppression chamber-drywell vacuum breakers in a way that could change the types or significantly increase the amounts of any effluent that may be released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed amendment does not involve any physical alterations of the plant configuration. The proposed change does not affect the safety function of the pressure suppression chamber-drywell vacuum breakers. The deletion of the Technical Specification Surveillance Requirement to perform an inspection of at least two pressure suppression chamber-drywell vacuum breakers during each refueling outage will not increase individual or cumulative occupational radiation exposure.

Based on the above, VY concludes that the proposed change meets the eligibility criteria for categorical exclusion as set forth in 10CFR51.22(c)(9). Pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

IV. REFERENCES

a) NUREG-1433, Revision 3, "Standard Technical Specifications General Electric Plants, BWR/4," dated March 2004.

b) INPO Significant Operating Experience Report "SOER 86-3 Check Valve Failures or Degradation, " dated October 15, 1986.

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Change 282

Markup of the Current Technical Specification and Bases Pages

3.7 LIMITING CONDITIONS FOR OPERATION

line is verified to be closed and conditions required by 3.7.D.2 are met.

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:

(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.

(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.

4.7 SURVEILLANCE REQUIREMENTS

6. Pressure Suppression Chamber - Drywell Vacuum Breakers

a. Periodic Operability Tests

Operability testing of the vacuum breakers shall be in accordance with Specification 4.6.E ~~and following any release of energy to the suppression chamber.~~ Operability of the corresponding position switches and position indicators and alarms shall be verified monthly and following any maintenance.

INSERT 1 →

b. Refueling Outage Tests

(1) All suppression chamber - drywell vacuum breaker position indication and alarm systems shall be calibrated and functionally tested.

(2) ~~At least two (2) of the suppression chamber - drywell vacuum breakers shall be inspected.~~

DELETED

3.7 LIMITING CONDITIONS FOR OPERATION

(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.

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

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:

i. From 24 hours after thermal power is greater than 15% rated thermal power following startup, to

4.7 SURVEILLANCE REQUIREMENTS

~~If deficiencies are found such that Specification 3.7.A.6 could not be met, all vacuum breakers shall be inspected and deficiencies corrected.~~

(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.

7. Oxygen Concentration

The primary containment oxygen concentration shall be measured and recorded on a weekly basis.

Insert 1

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.

PC 282

BASES: 4.7 (Cont'd)

The maximum allowable test leak rate at the peak accident pressure of 44 psig (La) is 0.80 weight % per day. The maximum allowable test leak rate at the retest pressure of 24 psig (Lt) has been conservatively determined to be 0.59 weight percent per day. This value was verified to be conservative by actual primary containment leak rate measurements at both 44 psig and 24 psig upon completion of the containment structure.

As most leakage and deterioration of integrity is expected to occur through penetrations, especially those with resilient seals, a periodic leak rate test program of such penetration is conducted at the peak accident pressure of 44 psig to insure not only that the leakage remains acceptably low but also that the sealing materials can withstand the accident pressure.

The Primary Containment Leak Rate Testing Program is based on Option B to 10CFR50, Appendix J, for development of leak rate testing and surveillance schedules for reactor containment vessels.

Surveillance of the suppression Chamber-Reactor Building vacuum breakers consists of operability checks and leakage tests (conducted as part of the containment leak-tightness tests). These vacuum breakers are normally in the closed position and open only during tests or an accident condition. Operability testing is performed in conjunction with Specification 4.6.E. ~~Inspections and~~ Calibrations are performed during the refueling outages; this frequency being based on equipment quality, experience, and engineering judgment.

The ten (10) drywell-suppression vacuum relief valves are designed to open to the full open position (the position that curtain area is equivalent to valve bore) with a force equivalent to a 0.5 psi differential acting on the suppression chamber face of the valve disk. This opening specification assures that the design limit of 2.0 psid between the drywell and external environment is not exceeded. Once each refueling outage each valve is tested to assure that it will open fully in response to a force less than that specified. ~~Also it is inspected to assure that it closes freely and operates properly.~~

The containment design has been examined to establish the allowable bypass area between the drywell and suppression chamber as 0.12 ft^2. This is equivalent to one vacuum breaker open by three-eighths of an inch (3/8") as measured at all points around the circumference of the disk or three-fourths of an inch (3/4") as measured at the bottom of the disk when the top of the disk is on the seat. Since these valves open in a manner that is purely neither mode, a conservative allowance of one-half inch (1/2") has been selected as the maximum permissible valve opening. Assuming that permissible valve opening could be evenly divided among all ten vacuum breakers at once, valve open position assumed to indication for an individual valve must be activated less than fifty-thousandths of an inch (0.050") at all points along the seal surface of the disk. Valve closure within this limit may be determined by light indication from two independent position detection and indication systems. Either system provides a control room alarm for a nonseated valve.

BASES: 4.7 (Cont'd)

At the end of each refueling 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 source of leakage will be identified and eliminated before power operation is resumed.

The drywell-suppression chamber vacuum breakers are exercised in accordance with Specification 4.6.E ~~and immediately~~ following FROM THE SAFETY/RELIEF VALVES AND termination of discharge of steam into the suppression chamber. 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:

FOLLOWING ANY OPERATION THAT CAUSES THE VACUUM BREAKERS TO OPEN

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

~~During each refueling outage, two drywell-suppression chamber vacuum breakers will be inspected to assure sealing surfaces and components have not deteriorated. Since valve internals are designed for a 40-year lifetime, an inspection program which cycles through all valves in one-eighth of the design lifetime is extremely conservative.~~

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.

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Change 282

Retyped Technical Specification and Bases Pages

3.7 LIMITING CONDITIONS FOR OPERATION

line is verified to be closed and conditions required by 3.7.D.2 are met.

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:

(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.

(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.

4.7 SURVEILLANCE REQUIREMENTS

6. Pressure Suppression Chamber - Drywell Vacuum Breakers

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.

b. Refueling Outage Tests

(1) All suppression chamber - drywell vacuum breaker position indication and alarm systems shall be calibrated and functionally tested.

(2) Deleted

3.7 LIMITING CONDITIONS FOR OPERATION

(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.

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

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:

i. From 24 hours after thermal power is greater than 15% rated thermal power following startup, to

4.7 SURVEILLANCE REQUIREMENTS

(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.

7. Oxygen Concentration

The primary containment oxygen concentration shall be measured and recorded on a weekly basis.

BASES: 4.7 (Cont'd)

The maximum allowable test leak rate at the peak accident pressure of 44 psig (La) is 0.80 weight % per day. The maximum allowable test leak rate at the retest pressure of 24 psig (Lt) has been conservatively determined to be 0.59 weight percent per day. This value was verified to be conservative by actual primary containment leak rate measurements at both 44 psig and 24 psig upon completion of the containment structure.

As most leakage and deterioration of integrity is expected to occur through penetrations, especially those with resilient seals, a periodic leak rate test program of such penetration is conducted at the peak accident pressure of 44 psig to insure not only that the leakage remains acceptably low but also that the sealing materials can withstand the accident pressure.

The Primary Containment Leak Rate Testing Program is based on Option B to 10CFR50, Appendix J, for development of leak rate testing and surveillance schedules for reactor containment vessels.

Surveillance of the suppression Chamber-Reactor Building vacuum breakers consists of operability checks and leakage tests (conducted as part of the containment leak-tightness tests). These vacuum breakers are normally in the closed position and open only during tests or an accident condition. Operability testing is performed in conjunction with Specification 4.6.E. Calibrations are performed during the refueling outages; this frequency being based on equipment quality, experience, and engineering judgment.

The ten (10) drywell-suppression vacuum relief valves are designed to open to the full open position (the position that curtain area is equivalent to valve bore) with a force equivalent to a 0.5 psi differential acting on the suppression chamber face of the valve disk. This opening specification assures that the design limit of 2.0 psid between the drywell and external environment is not exceeded. Once each refueling outage each valve is tested to assure that it will open fully in response to a force less than that specified.

The containment design has been examined to establish the allowable bypass area between the drywell and suppression chamber as 0.12 ft^2. This is equivalent to one vacuum breaker open by three-eighths of an inch (3/8") as measured at all points around the circumference of the disk or three-fourths of an inch (3/4") as measured at the bottom of the disk when the top of the disk is on the seat. Since these valves open in a manner that is purely neither mode, a conservative allowance of one-half inch (1/2") has been selected as the maximum permissible valve opening. Assuming that permissible valve opening could be evenly divided among all ten vacuum breakers at once, valve open position assumed to indication for an individual valve must be activated less than fifty-thousandths of an inch (0.050") at all points along the seal surface of the disk. Valve closure within this limit may be determined by light indication from two independent position detection and indication systems. Either system provides a control room alarm for a nonseated valve.

BASES: 4.7 (Cont'd)

At the end of each refueling 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 source of leakage will be identified and eliminated before power operation is resumed.

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.