Entergy Nuclear Operations, Inc.
Vermont Yankee
P.O. Box 0250
Governor Hunt Road
Vernon, VT 05354
Tel 802 257 7711

Michael J Colomb
Site Vice President

September 16, 2009

BVY 09-052

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

SUBJECT: Technical Specifications Proposed Change No. 284
Change to Requirements for Inoperable Containment Isolation Valves
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

Dear Sir or Madam:

Pursuant to 10CFR50.90, Entergy Nuclear Operations, Inc. (ENO) is proposing to amend Operating License DPR-28 for the Vermont Yankee Nuclear Power Station (VY). The proposed change would revise the Operating License Technical Specifications (TS) Section 3.7 to change the current wording to be consistent with NUREG-1433 "Standard Technical Specifications General Electric Plants, BWR/4," Revision 3. Specifically, the proposed change would change TS 3.7.D.2 to allow reactor operation, in the event any containment isolation valve becomes inoperable, provided the affected penetration flow path is isolated by the use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange. Also, a corresponding change to TS 4.7.D.2 is made to be consistent with NUREG-1433 actions and completion times.

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, was provided to the State of Vermont, Department of Public Service.

Attachment 1 to this letter provides an evaluation of the proposed change. Attachment 2 contains a markup of the current TS and TS Bases. Attachment 3 contains the retyped TS page and TS Bases. The TS Bases is provided for information only

ENO requests approval of the proposed amendment by September 1, 2010 with a 60 day implementation period.

There are no new regulatory commitments made in this letter.

A001
NRR

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

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 16, 2009.

Sincerely,

MJC/JMD

Attachment 1: Evaluation of the Proposed Change
Attachment 2: Markup of the Current Technical Specification and Bases Page
Attachment 3: Retyped Technical Specification and Bases Page

cc: Mr. Samuel J. Collins
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 284

Evaluation of the Proposed Change

EVALUATION OF THE PROPOSED CHANGE

1. Description of Change

Entergy Nuclear Operations, Inc. (ENO) is requesting to amend Operating License DPR-28 for Vermont Yankee Nuclear Power Station (VY). The proposed change would revise the Operating License Technical Specifications (TS) Section 3.7 to change the current wording to be consistent with NUREG-1433 Revision 3 "Standard Technical Specifications General Electric Plants, BWR/4," Revision 3. Specifically, the proposed change would change the Section 3.7.D.2 to allow reactor operation, in the event any containment isolation valve becomes inoperable, provided the affected penetration flow path is isolated by the use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange. Also, a corresponding change to TS 4.7.D.2 is made to be consistent with NUREG-1433 actions and completion times.

2. Proposed Change

The following change is proposed to the current TS Section 3.7.D.2:

Current TS 3.7.D.2 In the event any containment isolation valve becomes inoperable, reactor power operation may continue provided at least one containment isolation valve in each line having an inoperable valve is in the mode corresponding to the isolated condition.
Proposed TS 3.7.D.2 In the event any containment isolation valve becomes inoperable, reactor power operation may continue provided the affected penetration flow path is isolated by the use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.
Current TS 4.7.D.2 Whenever a containment isolation valve is inoperable, the position of at least one other valve in each line having an inoperable valve shall be logged daily.
Proposed TS 4.7.D.2 Whenever a containment isolation valve is inoperable, verify the affected penetration flow path is isolated once per 31 days.

3. Background

VY TS 3.7.D.2 requires at least one containment isolation valve (CIV) in each line having an inoperable CIV to be in the mode corresponding to the isolated condition. This specification depends on there being at least two CIVs in order to continue power operation with one CIV inoperable. The design of VY includes lines that penetrate the primary containment with other containment isolation configurations including single valve isolation. These lines typically include other automatic valves or maintenance isolation valves that are close to the containment boundary that can serve as interim isolation devices while repairs to the CIV are made. Currently, if a containment isolation valve on a line with a single isolation valve becomes inoperable, a plant shutdown in accordance with TS 3.7.D.3 would be required if the valve could not be readily made operable. Adopting the wording from NUREG-1433 would provide additional capability to support isolation of the affected line and avoid an unnecessary plant shut down transient. The change also makes TS 3.7.D.2 consistent with TS 3.7.A.3 which allows openings in systems, considered extensions of the primary containment, to be isolated by at lease one closed and deactivated automatic valve, closed manual valve or a blind flange. Also, a corresponding change to TS 4.7.D.2 is made to verify the affected penetration flow path is isolated once per 31 days. This is consistent with the actions and timeframe specified in NUREG-1433 and provides for confirmation that the flow path remains isolated.

4. Technical Analysis

The safety objective of the primary containment system, in conjunction with the core standby cooling systems, is to provide the capability, in the event of a postulated loss-of-coolant accident (LOCA), 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 consequences of the LOCA are described in the VY Update Final Safety Analysis Report (UFSAR) section 14.6.

To support this objective, the primary containment is provided with the capability for rapid isolation of all pipes that penetrate the primary containment with the means to provide a containment barrier that maintains leakage within permissible limits.

VY was designed and licensed to the Atomic Energy Commission 1967 Draft General Design Criteria (GDC) as discussed in the VY Updated Final Safety Analysis Report (UFSAR) Table 1.7.7 and Appendix F. The GDC specifically applicable to the design of containment isolation valves is GDC 53.

GDC 53 requires:

Containment Isolation Valves – Penetrations that require closure for the containment function shall be protected by redundant valving and associated apparatus.

UFSAR Section 5.2.3.5.1 provides the general criteria governing isolation valves for various categories of penetrations in part as follows:

1) *Pipes which penetrate the primary containment and which connect to the reactor primary system, are provided with at least two isolation valves in series and are designated as Class A isolation Valves. The lines consist of at least one valve located inside and at least one valve located outside primary containment.*

2) *Pipes or ducts which penetrate the primary containment and which do not connect directly to the reactor primary system, but are open to the primary containment free space, are generally provided with at least two isolation valves in series and are designated as Class B isolation valves. The penetration consists of at least two valves located outside primary containment, except that on water seal lines, one isolation valve in addition to the water seal is adequate to meet isolation requirements.*

3) *Lines which penetrate primary containment, and which neither connect to the reactor primary system, nor which open to the primary containment free space, are provided with at least one isolation valve which may be located outside primary containment and are designated as Class C isolation valves.*

Exceptions to the above general criteria are provided in UFSAR Section 5.2.3.5.1 and UFSAR Table 5.2.2 provides a listing of primary containment system penetrations, and associated containment isolation valves as well as the penetration type and other related information associated with each penetration. The integrated design of the containment isolation valves accommodates various process needs and ensures that the containment isolation function is maintained.

The current TS allows, in the event any containment isolation valve becomes inoperable, continued reactor power operation provided at least one containment isolation valve in each line having an inoperable valve is in the mode corresponding to the isolated condition. Since, by design, not all containment penetrations are provided with multiple containment isolation valves, VY may be forced into an unnecessary plant shutdown should an inoperable isolation valve not be able to be repaired within the 24 hour timeframe prescribed in the TS 3.7.D.3 for the plant to be in the cold shutdown condition.

Adopting the proposed wording would, in the event a containment isolation valve becomes inoperable, allow reactor power operation to continue provided the affected penetration flow path is isolated by the use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange. This provides other alternatives to isolate the affected penetration and would not result in a potentially unnecessary plant shutdown. This provision is consistent with the guidance contained in NUREG-1433. Since no completion time is proposed, actions to put the alternate containment device in place would be initiated immediately and be completed within the timeframe to ensure TS 3.7.D.3 is satisfied.

In accordance with the Bases contained in NUREG-1433, the VY TS Bases will be modified to state that the device used to isolate the penetration should be the closest available device to the primary containment. The Bases in NUREG-1433 also recognizes that the required action does not require any testing or device manipulation. Rather, it involves verification that those devices outside containment and capable of potentially being

mispositioned are in the correct position. VY TS 4.7.D.2 currently requires, whenever a containment isolation valve is inoperable, that the position of at least one other valve in each line having an inoperable valve shall be logged daily. The proposed change adopts actions consistent with NUREG-1433 to verify the affected penetration flow path is isolated once per 31 days. Verifying the affected flow path is isolated every 31 days provides added assurance, over and above normal plant status controls, that the isolation device is in the isolated condition.

The current TS requires at least one containment isolation valve in the affected line to be closed when a CIV is inoperable. In most cases, this valve would be subject to 10CFR50 Appendix J Type C leak rate testing. Under the proposed change there are a number of options for isolating the affected penetration some of which may not be subject to leak rate testing. This is not considered significant because the alternate isolation devices (i.e., use of at least one closed and de-activated automatic valve, closed manual valve or a blind flange) are considered passive devices, are not required to close automatically in response to an accident condition and are not required to be operated intermittently under post accident conditions. Leakage from passive devices is expected to be minimal with respect to the overall acceptable leakage assumed in the VY UFSAR Chapter 14.6 accident analysis. Also, the components used as isolation devices are typically subject to a periodic maintenance program that ensures components relied upon for system isolation are capable of performing the isolation function.

5. Regulatory Safety Analysis

No Significant Hazards Consideration

Entergy Nuclear Operations, Inc. (ENO) is proposing to modify the Vermont Yankee Nuclear Power Station Operating License Technical Specifications Section 3.7 to change the current wording to be consistent with NUREG-1433 "Standard Technical Specifications General Electric Plants, BWR/4," Revisions 3. Specifically, the proposed change would change TS 3.7.D.2 to allow reactor operation, in the event any containment isolation valve becomes inoperable, provided the affected penetration flow path is isolated by the use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange. Also, a corresponding change to TS 4.7.D.2 is made to be consistent with NUREG-1433 actions and completion times.

ENO has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10CFR50.92, "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 change does not impact the probability of any design basis accident in that no accident initiators are impacted. The change does not impact accident mitigation. The proposed change provides equivalent requirements for conditions where there is an inoperable containment isolation valve so that accident mitigation systems function consistent with the licensing and design

basis. The change ensures that the function of primary containment is maintained should there be an inoperable containment isolation valve by isolation of the penetration flow path using passive devices. Although the isolation means are not in all cases leak tested, leakage is not expected to be significant since the devices used for isolation are passive components that are in the isolated position. Therefore, the proposed change does not involve a significant increase in the probability or 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 provides allowance for crediting passive isolation devices on lines that have been determined to have an inoperable containment isolation valve. The use of a passive component (i.e., another containment isolation valve in the affected line) to compensate for an inoperable isolation valve is already part of the licensing basis. The change expands the types of passive devices which may be used. Operation of existing 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 change any existing design requirements and does not adversely affect existing plant safety margins or the reliability of the equipment assumed to operate in the safety analysis. The proposed change affects the types of passive devices that can be used as the containment boundary when a containment isolation valve is inoperable. The design of such devices would meet containment design requirements so that safety margins are maintained. Leakage through passive devices would be minimal and be within regulatory limits. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, ENO concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10CFR50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

6. Environmental Consideration

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 V 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 provides means to isolate lines penetrating primary containment and therefore does not involve any physical alterations to the plant configuration that could lead to a change in the type or amount of effluent release offsite.

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

The proposed amendment does not involve issues associated with occupational radiation exposure. The proposed amendment specifies allowable containment isolation devices that compensate for having an inoperable containment isolation valve.

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.

6. Precedents

None

7. References

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

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Change 284

Markup of the Current Technical Specification and Bases Page

3.7 LIMITING CONDITIONS FOR OPERATION

D. Primary Containment Isolation Valves

1. During reactor power operating conditions all containment isolation valves and all instrument line flow check valves shall be operable except as specified in Specification 3.7.D.2.

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

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

4.7 SURVEILLANCE REQUIREMENTS

D. Primary Containment Isolation Valves

1. Surveillance of the primary containment isolation valves should be performed as follows:

   a. The operable isolation valves that are power operated and automatically initiated shall be tested for automatic initiation and closure time at least once per operating cycle.

   b. Operability testing of the primary containment isolation valves shall be performed in accordance with Specification 4.6.E.

   c. Deleted

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

the affected penetration flow path is isolated by the use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.

verify the affected penetration flow path is isolated once per 31 days.

BASES: 3.7 (Cont'd)

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

Use of the SGTS, without the fan and the 7.1 kW heater in operation, as a vent path during torus venting does not impact subsequent adsorber capability because of the very low flows and because humidity control is maintained by the standby 1 kW heaters, therefore operation in this manner does not accrue as operating time.

D. Primary Containment Isolation Valves

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

The primary containment design includes lines that penetrate the primary containment with different containment isolation valve configurations including double and single valve isolation. Automatic initiation is required to minimize the potential leakage paths from the containment in the event of a loss-of-coolant accident. These lines typically include additional automatic valves or manual maintenance isolation valves, close to the containment boundary, that can serve as interim isolation devices while repairs to a containment isolation valve are made. Isolation using at least one closed de-activated automatic valve, closed manual valve, or blind flange in each line is sufficient to maintain the integrity of the primary containment. The selected isolation device should be the closest available device to the primary containment.

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

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

In the event that there are one or more RBAVSIVs inoperable, the affected penetration flow path(s) must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. The required action must be completed within the eight hour or four hour completion time, as applicable. The specified time periods are reasonable considering the time required to isolate the penetration, and the probability of a DBA occurring during this short time.

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

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Change 284

Retyped Technical Specification and Bases Page

3.7 LIMITING CONDITIONS FOR OPERATION	4.7 SURVEILLANCE REQUIREMENTS
D. Primary Containment Isolation Valves	D. Primary Containment Isolation Valves
1. During reactor power operating conditions all containment isolation valves and all instrument line flow check valves shall be operable except as specified in Specification 3.7.D.2.	1. Surveillance of the primary containment isolation valves should be performed as follows: a. The operable isolation valves that are power operated and automatically initiated shall be tested for automatic initiation and closure time at least once per operating cycle. b. Operability testing of the primary containment isolation valves shall be performed in accordance with Specification 4.6.E. c. Deleted
2. In the event any containment isolation valve becomes inoperable, reactor power operation may continue provided the affected penetration flow path is isolated by the use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	2. Whenever a containment isolation valve is inoperable, verify the affected penetration flow path is isolated once per 31 days.
3. If Specifications 3.7.D.1 and 3.7.D.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.	

BASES: 3.7 (Cont'd)

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

Use of the SGTS, without the fan and the 7.1 kW heater in operation, as a vent path during torus venting does not impact subsequent adsorber capability because of the very low flows and because humidity control is maintained by the standby 1 kW heaters, therefore operation in this manner does not accrue as operating time.

D. Primary Containment Isolation Valves

The primary containment design includes lines that penetrate the primary containment with different containment isolation valve configurations including double and single valve isolation. Automatic initiation is required to minimize the potential leakage paths from the containment in the event of a loss-of-coolant accident. These lines typically include additional automatic valves or manual maintenance isolation valves, close to the containment boundary, that can serve as interim isolation devices while repairs to a containment isolation valve are made. Isolation using at least one closed de-activated automatic valve, closed manual valve, or blind flange in each line is sufficient to maintain the integrity of the primary containment. The selected isolation device should be the closest available device to the primary containment.

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

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

In the event that there are one or more RBAVSIVs inoperable, the affected penetration flow path(s) must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. The required action must be completed within the eight hour or four hour completion time, as applicable. The specified time periods are reasonable considering the time required to isolate the penetration, and the probability of a DBA occurring during this short time.