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

October 14, 2008

BVY 08-076

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

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Revision of Technical Specification Bases Pages

Dear Sir or Madam,

This letter provides revised Technical Specification (TS) Bases pages. TS Bases pages 164a and 165 were revised to update a section reference and add additional information to the Basis for TS section 3.7.A relating to drywell-to-suppression chamber differential pressure and containment inerting requirements. The additional information is consistent with NUREG 1433, Revision 3 and reflects Vermont Yankee's licensing basis.

This change to the TS Bases was processed in accordance with the TS Bases Control Program specified in TS 6.7.E and has been determined to not require a license amendment in accordance with 10CFR50.59. Therefore, prior NRC approval is not required.

Revised TS Bases pages are attached for your records. No NRC action is requested on this submittal.

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

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

Sincerely,

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

Attachment: Revised Technical Specification Bases Pages
cc list (next page)

A001
NRR

cc: Mr. Samuel J. Collins, Region 1 Administrator
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. James S. Kim, Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

USNRC Resident Inspector
Vermont Yankee Nuclear Power Station
320 Governor Hunt Road
P.O. Box 157
Vernon, VT 05354

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

Docket No. 50-271
BVY 08-076

Attachment 1

Vermont Yankee Nuclear Power Station

Revised Technical Specification Bases Pages

BASES: 3.7 (Cont'd)

The purpose of the vacuum relief valves is to equalize the pressure between the drywell and suppression chamber and suppression chamber and reactor building so that the structural integrity of the containment is maintained.

Technical Specification 3.7.A.10.b is based on the assumption that the operability testing of the pressure suppression chamber-reactor building vacuum breaker, when required, will normally be performed during the same four hour testing interval as the pressure suppression chamber-drywell vacuum breakers in order to minimize operation with <1.7 psi, differential pressure.

The vacuum relief system from the pressure suppression chamber to Reactor Building consists of two 100% vacuum relief breakers (2 parallel sets of 2 valves in series). Operation of either system will maintain the pressure differential less than 2 psig; the external design pressure is 2 psig. With one vacuum breaker out of service there is no immediate threat to accident mitigation or primary containment and, therefore, reactor operation can be continued for 7 days while repairs are being made.

The capacity of the ten (10) drywell vacuum relief valves is sized to limit the pressure differential between the suppression chamber and drywell during post-accident drywell cooling operations to the design limit of 2 psig. They are sized on the basis of the Bodega Bay pressure suppression tests. The ASME Boiler and Pressure Vessel Code, Section III, Subsection B, for this vessel allows eight (8) operable valves, therefore, with two (2) valves secured, containment integrity is not impaired.

Each drywell-suppression chamber vacuum breaker is fitted with a redundant pair of limit switches to provide fail-safe signals to panel mounted indicators in the Reactor Building and alarms in the Control Room when the disks are open more than 0.050" at all points along the seal surface of the disk. These switches are capable of transmitting the disk closed to open signal with 0.01" movement of the switch plunger. Continued reactor operation with failed components is justified because of the redundance of components and circuits and, most importantly, the accessibility of the valve lever arm and position reference external to the valve. The fail safe feature of the alarm circuits assures operator attention if a line fault occurs.

The requirement to inert the containment is based on the recommendation of the Advisory Committee on Reactor Safeguards. This recommendation, in turn, is based on the assumption that several percent of the zirconium in the core will undergo a reaction with steam during the loss-of-coolant accident. This reaction would release sufficient hydrogen to result in a flammable concentration in the primary containment building. The oxygen concentration is therefore kept below 4% to minimize the possibility of hydrogen combustion.

BASES: 3.7 (Cont'd)

General Electric has estimated that less than 0.1% of the zirconium would react with steam following a loss-of-coolant due to operation of emergency core cooling equipment. This quantity of zirconium would not liberate enough hydrogen to form a combustible mixture.

Drywell-to-suppression chamber differential pressure must be controlled when the primary containment is inert. The primary containment must be inert in RUN MODE, since this is the condition with the highest probability for an event that could produce hydrogen. It is also the condition with the highest probability of an event that could impose large loads on the primary containment.

Inerting primary containment is an operational problem because it prevents primary containment access without an appropriate breathing apparatus. Therefore, the primary containment is inerted as late as possible in the unit startup and is de-inerted as soon as possible in the unit shutdown. As long as reactor power is <15% RTP, the probability of an event that generates hydrogen or excessive loads on primary containment occuring within the first 24 hours following a startup or within the last 24 hours prior to a shutdown is low enough that these "windows," with the primary containment not inerted, are also justified. The 24 hour time period is a reasonable amount of time to allow plant personnel to perform inerting or de-inerting.

The use of the 18" purge and vent flow path isolation valves AC-7A (16-19-7A), AC-7B (16-19-7B), AC-8 (16-19-8), AC-10 (16-19-10) has been restricted to 90 hours per year. Normal plant operations (other than inerting and de-inerting) will have AC-8 and AC-10 closed and nitrogen will be supplied to the drywell via the 1" nitrogen makeup supply. The differential pressure maintained between the drywell and torus will allow the nitrogen to "bubble over" into the suppression chamber. A normally open AC-6B (3") allows for venting. A normally closed AC-6A (3") is periodically opened for performance of