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October 26, 2005

Docket No. 50-271  
BVY 05-099  
TAC No. MC0761

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

**Subject: Vermont Yankee Nuclear Power Station  
Technical Specification Proposed Change No. 263 – Supplement No. 39  
Extended Power Uprate – Risk Analysis of Containment Overpressure**

- Reference:
- 1) Entergy letter to U.S. Nuclear Regulatory Commission, "Vermont Yankee Nuclear Power Station, License No. DPR-28 (Docket No. 50-271), Technical Specification Proposed Change No. 263, Extended Power Uprate," BVY 03-80, September 10, 2003
  - 2) Entergy letter to U.S. Nuclear Regulatory Commission, "Vermont Yankee Nuclear Power Station, License No. DPR-28 (Docket No. 50-271), Technical Specification Proposed Change No. 263 – Supplement No. 38, Extended Power Uprate – Containment Overpressure Credit," BVY 05-098, October 21, 2005
  - 3) U.S. Nuclear Regulatory Commission, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Regulatory Guide 1.174, Rev. 1, November 2002
  - 4) Entergy letter to U.S. Nuclear Regulatory Commission, "Vermont Yankee Nuclear Power Station, License No. DPR-28 (Docket No. 50-271), Technical Specification Proposed Change No. 263 – Supplement No. 8, Extended Power Uprate – Response to Request for Additional Information," BVY 04-058, July 2, 2004

This letter provides additional information regarding the application by Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (Entergy) for a license amendment (Reference 1) to increase the maximum authorized power level of the Vermont Yankee Nuclear Power Station (VYNPS) from 1593 megawatts thermal (MWt) to 1912 MWt.

As part of the extended power uprate (EPU) submittal for VYNPS, Entergy proposed taking credit for containment accident pressure to provide adequate net positive suction head (NPSH)

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to the emergency core cooling system (ECCS) pumps during the large break loss-of-coolant accident and anticipated transients without scram.

In Reference 2 Entergy supplemented the analyses crediting containment accident pressure that were performed in accordance with traditional engineering methods, with risk-informed evaluations of the impact of the proposed change in licensing basis. Attachment 1 to this letter provides the quantitative risk assessment that was not complete at the time Reference 2 was submitted.

Regulatory Guide 1.174 (Reference 3) provides guidance for determining the risk impact of plant-specific licensing basis changes. The metrics that have been adopted in Regulatory Guide 1.174 for the characterization of risk are core damage frequency (CDF) and large early release frequency (LERF). Acceptability is predicated on there being small changes in CDF and LERF.

Results of the risk assessment of plant internal events for VYNPS demonstrate that the risk impact of the proposed change to credit containment overpressure is very small (approximately  $5.78E-7$ /reactor-year (ry) increase in CDF, and approximately  $4.50E-8$ /ry increase in LERF). These risk estimates meet the acceptance criteria of Regulatory Guide 1.174 to be considered very small changes in risk (i.e.,  $< 1E-6$ /ry  $\Delta$ CDF and  $< 1E-7$ /ry  $\Delta$ LERF).

Entergy made appropriate changes to the probabilistic safety assessment model to enable the performance of cases which address the impact of crediting containment overpressure. The risk assessment examined event sequences in which containment integrity is necessary for success of the low pressure emergency core cooling system pumps. The steps taken to perform the risk assessment are included in Attachment 1. In addition, as a result of these changes, Attachment 1 supersedes the response to NRC's request for additional information SPSB-C-1 that was provided in Attachment 1 of Reference 4.

The common conclusion from the analyses, using both traditional engineering and risk-informed approaches, is that the proposed crediting of containment accident pressure represents a small change in risk and meets NRC's policy statement for safety goals.

There are no new regulatory commitments contained in this submittal.

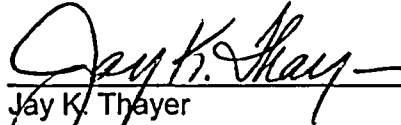
This supplement to the license amendment request provides additional information to clarify Entergy's application for a license amendment and does not change the scope or conclusions in the original application, nor does it change Entergy's determination of no significant hazards consideration.

If you have any questions or require additional information, please contact Mr. James DeVincentis at (802) 258-4236.

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

Executed on October 26, 2005.

Sincerely,



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Jay K. Thayer  
Site Vice President  
Vermont Yankee Nuclear Power Station

Attachments (1)

cc: Mr. Samuel J. Collins (w/o attachment)  
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Mr. Richard B. Ennis, Project Manager  
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Mr. David O'Brien, Commissioner  
VT Department of Public Service  
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**Attachment 1**

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 263 – Supplement No. 39

Extended Power Uprate – Risk Analysis of Containment Overpressure

**Engineering Report No. RPT-05-00110, Rev. 0**

Total number of pages in Attachment 1  
(excluding this cover sheet) is 303.