

# VERMONT YANKEE NUCLEAR POWER CORPORATION

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BVY 99-158

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

- References:
- (a) The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident, Volume III, SAFER/GESTR Application Methodology, NEDE-23785-1-P-A, General Electric Company, Revision 1, October 1984.
  - (b) Letter, C.O. Thomas (USNRC) to J.F. Quirk (GE), "Acceptance for Referencing of Licensing Topical Report NEDE-23785, Revision 1, Volume III (P), The GESTR-LOCA and SAFER models for the Evaluation of the Loss-of-Coolant Accident," June 1, 1984.
  - (c) NEDC-32814P, "Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis," dated March 1998.
  - (d) Letter, G.A. Watford (GE) to USNRC, "Summary of Changes and Errors in ECCS Evaluation Models," GAW-99-003, MFN-004-99, dated June 30, 1999.

**Subject: Vermont Yankee Nuclear Power Station  
License No. DPR-28 (Docket No. 50-271)  
Annual 10CFR50.46(a)(3)(ii) Report for 1999**

The purpose of this letter is to report, in accordance with 10CFR50.46(a)(3)(ii), changes in peak cladding temperature (PCT) for Vermont Yankee's Emergency Core Cooling System (ECCS) Loss of Coolant Accident (LOCA) analysis. This annual report covers Vermont Yankee Nuclear Power Station Cycle 20, from January to October 1999 and Cycle 21 for December 1999.

For both Cycle 20 and 21, Vermont Yankee has used the General Electric (GE) SAFER/GESTR model for evaluation of the ECCS/LOCA (Reference a). This model has been approved by the USNRC in Reference (b) and is currently being utilized at the majority of operating Boiling Water Reactors. A plant specific analysis for Vermont Yankee was performed using SAFER/GESTR-LOCA methodology. The analysis was documented in Reference (c).

The Vermont Yankee LOCA analysis conservatively assumes that the recirculation pump discharge valves do not close during a LOCA event, even though they receive a closure signal. We made this assumption because the valve motor operators were not in our GL 89-10 Motor Operated Valve (MOV) program and the motor operator power supply cables had not been analyzed to ensure they would not be damaged by potential LOCA induced jet impingement loads. During our 1999 Refueling Outage, we upgraded these MOVs to meet GL 89-10 criteria and re-routed the power supply cables to be protected from jet impingement loads. The

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modifications ensure that these valves can close under postulated LOCA conditions. In our LOCA analysis for Cycle 21 however, no credit for these modifications is taken and we still conservatively assume the valves remain open. This is conservative because assuming closure of the valves will result in a decrease in analyzed peak clad temperature. It is Vermont Yankee's understanding that, although this results in a more conservative plant condition, it remains bounded by the current LOCA analysis and no analysis changes are necessary. At some future time, a re-analysis may be performed, changing the assumptions to credit this valve closure.

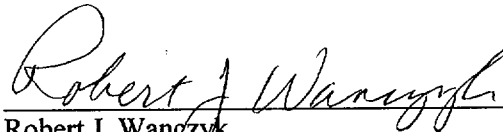
In Reference (d) GE reported changes and errors identified in the ECCS Evaluation methodology used by Vermont Yankee. These did not constitute a "significant change" as described in 10CFR50.46(a)(3)(i) and therefore, were not previously reported.

As a result of the use of the approved SAFER/GESTR model, and including fuel changes and incorporation of methodology errors or changes (Reference d), the limiting licensing basis fuel rod PCT for Cycle 21 is less than 1850°F, the same value as last cycle.

If you have any questions concerning this transmittal, please contact Mr. Jeffrey T. Meyer at (802) 258-4105.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION



Robert J. Wanczyk  
Director of Safety and Regulatory Affairs

cc: USNRC Region 1 Administrator  
USNRC Resident Inspector – VYNPS  
USNRC Project Manager – VYNPS  
Vermont Department of Public Service

## SUMMARY OF VERMONT YANKEE COMMITMENTS

BVY NO.: BVY 99-158

The following table identifies commitments made in this document by Vermont Yankee. Any other actions discussed in the submittal represent intended or planned actions by Vermont Yankee. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager of any questions regarding this document or any associated commitments.

COMMITMENT	COMMITTED DATE OR "OUTAGE"
None	N/A