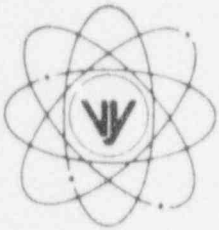


VERMONT YANKEE NUCLEAR POWER CORPORATION



Ferry Road, Brattleboro, VT 05301-7002

REPLY TO:
ENGINEERING OFFICE
580 MAIN STREET
BOLTON, MA 01740
(508) 779-6711

December 29, 1995
BVY 95-141

United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

References: (a) License No. DPR-28 (Docket No. 50-271)
(b) Additional References to be found in Enclosure A

Subject: 1995 Report in Accordance with 10CFR50.46(a)(3)(ii) for Vermont Yankee

The purpose of this letter is to report, in accordance with 10CFR50.46(a)(3)(ii), a conservative error found in Vermont Yankee's Cycle 18 fuel behavior model which resulted in a 10°F reduction in peak cladding temperature (PCT).

This letter also includes a summary of Vermont Yankee's transition from using General Electric SAFE/REFLOOD ECCS methodology to using Yankee Atomic Electric Company's NRC approved RELAP5YA (BWR version) evaluation methodology.

For Vermont Yankee operation through Cycle 16, the ECCS evaluation methodology was General Electric's SAFE/REFLOOD model, described in NEDE 20566-P-A, "Analytical Model for Loss-of-Coolant Analysis in Accordance with 10CFR 50 Appendix K" [Reference (b)]. The Vermont Yankee specific calculation was described in NEDO-21697, "Loss-of-Coolant Accident Analysis Report for Vermont Yankee Nuclear Power Station" [Reference (c)]. General Electric informed the NRC of changes to these [References (m) and (n)] to satisfy 10 CFR 50.46(a)(3)(ii). The maximum PCT for fuel bundles in Cycle 16 was 2199°F.

The ECCS evaluation methodology for Vermont Yankee operation during Cycle 17, (October 25, 1993 to May 2, 1995), became Vermont Yankee's FROSSTEY-2/HUXY/RELAP5YA (BWR version) model, described in [References (d) through (i)] and approved by the NRC in [References (o) through (r)]. The cycle specific calculations are described in YAEC-1772, "Vermont Yankee Loss-of-Coolant Accident Analysis" [Reference (j)] and YAEC-1867, "Vermont Yankee Cycle 17 Core Performance Analysis Report" [Reference (k)]. The maximum PCT for the bundles in Cycle 17 was 1778.1°F. There were no changes to, or errors in the Vermont Yankee evaluation methodology or its application that required reporting pursuant to 10CFR50.46(a)(3)(ii) in 1993 or 1994.

For the current operating Cycle 18, which started May 2, 1995, the ECCS evaluation methodology was again the same FROSSTEY-2/HUXY/RELAP5YA (BWR version) model. The Cycle 18 specific calculations are described in YAEC-1908, "Vermont Yankee Cycle 18 Core Performance Analysis Report" [Reference (l)]. No changes to the model were made for these calculations. The maximum PCT for the bundles in Cycle 18 was determined to be 1788.9°F. The slight increase in PCT was caused by fuel changes and a change in the UNIX operating system. After this PCT was documented, a conservative error was found in the fuel behavior model in RELAP5YA. Reanalysis with the correction resulted in a PCT of 1778.1°F, a 10.8°F reduction in the conservative direction from the initial Cycle 18 calculated value.

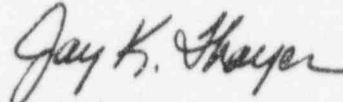
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We trust this information is satisfactory; however, should you have any questions, please do not hesitate to contact us.

Sincerely,

Vermont Yankee Nuclear Power Corporation

A handwritten signature in cursive script that reads "Jay K. Thayer".

Jay K. Thayer
Vice President, Engineering

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS

ENCLOSURE A

REFERENCES

- (a) License No. DPR-28 (Docket No. 50-27)
- (b) NEDE 20566-P-A, "Analytical Model for Loss-of-Coolant Analysis in Accordance with 10 CFR 50 Appendix K"
- (c) NEDO-21697, "Loss-of-Coolant Accident Analysis Report for Vermont Yankee Nuclear Power Station"
- (d) Letter, VYNPC to USNRC, "Vermont Yankee LOCA Analysis Method: FROSSTEY Fuel Performance Code (FROSSTEY-2)," FVY 87-116, dated December 16, 1987
- (e) Letter, VYNPC to USNRC, "Responses to Request for Additional Information FROSSTEY-2 Fuel Performance Code," BVY 91-024, dated March 6, 1991
- (f) Letter, VYNPC to USNRC, "FROSSTEY-2 Fuel Performance Code - Vermont Yankee Response to Remaining Concerns," BVY 92-54, dated May 15, 1992
- (g) Report, "Vermont Yankee BWR Loss-of-Coolant Accident Licensing Analysis Method," YAEC-1547P-A, Revision 0, June 1986; Revision 1, July 1993
- (h) Report, "RELAP5YA, A Computer Program for Light-Water Reactor System Thermal-Hydraulic Analysis," YAEC-1300P-A, Revision 0, October 1982 Revision 1, July 1993
- (i) Letter, VYNPC to USNRC, "HUXY Computer Code Information for the Vermont Yankee BWR LOCA Licensing Analysis Method," FVY 87-63, dated June 4, 1987
- (j) Report, "Vermont Yankee Loss-of-Coolant Accident Analysis," YAEC-1772, June 1993
- (k) Letter, VYNPC to USNRC, "Vermont Yankee Cycle 17 Core Operating Limits Report," NVY 93-115, dated November 8, 1993
- (l) Report, "Vermont Yankee Cycle 18 Core Performance Analysis Report," YAEC-1908, January 1995
- (m) Letter, General Electric to USNRC, "Reporting of Changes and Error in ECCS Evaluation Models," dated June 26, 1992
- (n) Letter, General Electric to USNRC, "Reporting of Changes and Error in ECCS Evaluation Models," dated June 30, 1993
- (o) Letter, USNRC to VYNPC, "Approval of Use of Thermal Hydraulic Code RELAP5YA," NVY 87-136, dated August 25, 1987
- (p) Letter, USNRC to VYNPC, "Safety Evaluation for Vermont Yankee Nuclear Power Station, RELAP5YA LOCA Analysis Methodology," NVY 92-192, dated October 21, 1992
- (q) Letter, USNRC to VYNPC, "Vermont Yankee Nuclear Power Station, Safety Evaluation of FROSSTEY-2 Computer Code," NVY 92-178, dated September 24, 1992
- (r) Letter, USNRC to VYNPC, "HUXY Code Use," NVY 91-26, dated February 27, 1991