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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 17, 2011

Site Vice President  
Entergy Nuclear Operations, Inc.  
Vermont Yankee Nuclear Power Station  
P.O. Box 250  
Governor Hunt Road  
Vernon, VT 05354

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - REQUEST FOR  
ADDITIONAL INFORMATION REGARDING CORE PLATE HOLD DOWN BOLT  
INSPECTION PLAN AND ANALYSIS (TAC NO. ME6248)

Dear Sir or Madam:

By letter dated March 18, 2011 (Agencywide Document Access and Management System (ADAMS) Accession No. ML110840068), Entergy Nuclear Operations, Inc. (Entergy) submitted a plant-specific analysis report of the core plate hold down bolts. In Amendment 11 of the license renewal application (LRA), Entergy committed to either install core plate wedges or complete a plant-specific analysis to determine the acceptance criteria for continued inspection of the core plate hold down bolts in accordance with Boiling Water Reactor (BWR) Vessel and Internals Project (BWRVIP), BWR Core Plate Inspection and Flaw Evaluation Guidelines (BWRVIP-25) and submit the inspection plan and analysis to the Nuclear Regulatory Commission (NRC)

2 years prior to the period of extended operation (PEO). By letter dated December 30, 2010 (ADAMS Accession No. ML110040117), Entergy updated the commitment to indicate the inspection plan and analysis would be provided one year prior to the PEO.

The NRC staff reviewed the portions of the subject request related to the core plate hold down bolt analysis and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). A response to the RAI is requested by January 6, 2012.

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Please contact me at (301) 415-4125 if you have any questions on this issue.

Sincerely,

*/ra/*

James Kim, Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosures:

1. RAI (non-proprietary)
2. RAI (proprietary)

cc w/encl 1: Distribution via Listserv

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REQUEST FOR ADDITIONAL INFORMATION  
REGARDING CORE PLATE HOLD DOWN BOLT INSPECTION PLAN AND ANALYSIS  
ENTERGY NUCLEAR OPERATIONS, INC.  
VERMONT YANKEE NUCLEAR POWER STATION  
DOCKET NO. 50-271

RAI-1

[proprietary]

RAI-2

[proprietary]

RAI-3

Section 6.0 Loads and Load combinations: General Electric Hitachi (GEH) safety communication (SC) 09-03 issued on August 3, 2009, addresses the acoustic load (AC) load acting on the shroud in a postulated recirculation suction line break event, and its omission from shroud loads may be non-conservative. The core plate is attached to the shroud, and the AC load may have an impact on the stress analysis of core plate bolts. It is noted that Boiling Water Reactor Vessel and Internals Project (BWRVIP)-25 Appendix-A calculation for core plate hold down bolt stress analysis does not address AC load because it was issued prior to SC 09-03. The licensee is requested to either re-compute the faulted stress in core plate bolts or provide a justification for not considering the AC loading in the faulted load combination in Table 6-2.

RAI-4

Sections 6.6 and 8.1 Friction: Entergy takes credit for friction between the core plate rim and shroud ledge using a friction factor of 0.2 in Vermont Yankee Nuclear Power Station (VY) core plate bolt stress analysis while BWRVIP-25 Appendix-A core analysis does not take credit for friction. It is noted that for the bounding case without any friction, all the lateral loads on the core plate will be resisted by the core plate bolts by bending and shear. When friction is considered, a portion of the lateral loads are resisted by friction at the rim and shroud ledge interface resulting in lower lateral loads on the core plate bolts. (a) The licensee is requested to quantify the impact on the core plate stresses for the bounding case without friction and (b) The licensee is also requested to quantify the impact of the additional load on the qualification of core plate when friction is considered.

RAI-5

[proprietary]

RAI-6

Sections 1.0 and 8.1 Finite Element (FE) Model differences: In Section 1.0, it was stated that GEH performed a plant-specific core plate hold down bolt stress analysis for VY, and in Section 8.1 it is mentioned that the analysis does not have a plant-specific FE model, and some calculations use scaled values from BWRVIP-25 data. (a) The licensee is requested to elaborate what items are scaled values from BWRVIP-25 data and (b) The licensee is also requested to provide a table of differences between BWRVIP-25 core plate FE model and VY core plate analysis model along with justification for not having a VY plant-specific FE model.

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*/ra/*

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ADAMS ACCESSION NO.: ML113140242 (proprietary), ML113140275 (non-proprietary)

OFFICE	NRR/DORL LPL1-1/PM	NRR/DORL LPL1-1/LA	NRR/DE EMCB/BC	NRR/DORL LPL1-1/BC
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DATE	11/16/11	11/16/11	11/16/11	11/17/11

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