

June 9, 1994

Docket No. 50-271

Mr. Donald A. Reid, Vice President  
Operations  
Vermont Yankee Nuclear Power Corporation  
Ferry Road  
Brattleboro, Vermont 05301

Dear Mr. Reid:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON PROPOSED CHANGE NO. 173, BWR  
THERMAL HYDRAULIC STABILITY AND PLANT-INFORMATION REQUIREMENTS FOR  
BWROG OPTION 1-D LONG TERM STABILITY SOLUTION - VERMONT YANKEE  
NUCLEAR POWER STATION (TAC NO. M89201)

In conducting its review of your application dated March 31, 1994, the  
NRC staff has prepared the enclosed Request for Additional Information  
(Enclosure 1), which is required for completion of the staff's review. The  
reporting and/or recordkeeping requirements contained in this letter affect  
fewer than ten respondents; therefore, OMB clearance is not required under  
P.L. 96-511.

Sincerely,  
Original signed by:  
Daniel H. Dorman, Project Manager  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

cc w/enclosure:

See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in cursive script, reading "Daniel H. Dorman", is written over the typed name.

Daniel H. Dorman, Project Manager  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

cc w/enclosure:  
See next page

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Vermont Yankee Nuclear Power Station

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

REQUEST FOR ADDITIONAL INFORMATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATING TO PROPOSED CHANGE NO. 173 TO LICENSE NO. DPR-28

VERMONT YANKEE NUCLEAR POWER CORPORATION

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

The NRC staff's preliminary review of Vermont Yankee Proposed Change No. 173, "BWR Thermal Hydraulic Stability and Plant-Information Requirements for BWROG Option 1-D Long Term Stability Solution," has identified some deficiencies. The following additional information will be required for the staff to complete its review.

1. Page 2 of the March 31, 1994, application (BVY 94-36) states that "Power distribution controls will be administratively implemented to assure that plant operation is maintained within the safety and analysis basis from which the power and flow limits are derived." However, the application does not describe these controls at all. Power distribution controls in Solution 1-D are crucial to guarantee that (a) the exclusion region remains valid and (b) out-of-phase oscillations do not develop in the case of inadvertent entry into the exclusion region.

Provide a detailed description of the power distribution controls and the administrative procedures used to implement them.

2. Throughout the proposed Technical Specification (TS) changes, one reads sentences like "oscillations ... can be readily detected", or "the APRM flow biased scram function will suppress oscillations prior to exceeding the fuel safety limit." These sentences are grossly incorrect in the case of out-of-phase oscillations and may lead operators to a false sense of security. The staff has agreed that Solution 1-D plants are more likely to observe in-phase core-wide oscillations than out-of-phase, but calculations show that out-of-phase oscillations are possible. The removal of all out-of-phase instability monitoring requirements and the "flavor" of the proposed TS changes indicates an overconfidence that may be detrimental to safety.

Provide an operator training plan and/or changes in the proposed TSs to address concerns about the possibility of out-of-phase instabilities.

3. The proposed TSs do not address specifically any reload confirmation procedures, and it appears that the exclusion region is recalculated every reload. Originally, type-1 solutions were envisioned with permanent exclusion regions that did not change on a cycle-by-cycle basis unless significant deviations existed with respect to the reference cycle.

Provide a description of the reload confirmation or exclusion region definition process.