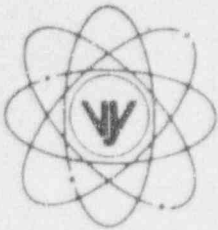


VERMONT YANKEE NUCLEAR POWER CORPORATION



Ferry Road, Brattleboro, VT 05301-7002

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

September 9, 1994
BVY 94-91

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

References: References may be found in Enclosure A

Subject: Response to NRC Generic Letter 94-02 Regarding Stability Interim Corrective Actions and Plans for Implementation of BWROG Long Term Stability Solution Option 1-D at Vermont Yankee

In response to the Requested Actions in Generic Letter 94-02 [Reference (b)], Vermont Yankee Nuclear Power Corporation (VYNPC) plans to implement the BWR Owners' Group (BWROG) Stability Long Term Solution (LTS) Option 1-D for final resolution of the reactor coupled neutronic/thermal-hydraulic stability issue. The following provides details on these plans and Enclosure B provides a milestone schedule for implementation.

Specifically, Reference (b) requested licensees to:

- 1) Review its current procedures and training programs and modify them, as appropriate, to strengthen the administrative provisions intended to avoid power oscillations or to detect and suppress them, if they occur; and
- 2) Develop and submit a plan for long-term stability corrective actions to ensure the plant is in compliance with General Design Criteria 10 and 12.

To address Item 2, VYNPC plans to implement by the start of Cycle 18, which is currently planned for the Spring of 1995, the BWR Owners' Group (BWROG) LTS Option 1-D as presented in the solution concepts and supporting methodology described in NEDO-31960 [Reference (c)] and NEDO-31960, Supplement 1, [Reference (d)]. NRC acceptance of the BWROG developed solution concepts and supporting methodology is indicated in Reference (e) and the Technical Evaluation Report (TER) attached to it. VYNPC followed up the BWROG submittals with a plant

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specific analysis [Reference (f)], a proposed technical specification change [Reference (g)] and a response to request for additional information [Reference (h)]. Other key milestones in the implementation plan are listed in Enclosure B. Due to availability of vendor software for the power distribution controls, the on-line monitor/predictor which will support the power distribution controls will not be available until early 1996. As shown in Enclosure B, the monitor/predictor is expected to be fully operational by January 31, 1996 based on successful site testing of the monitor/predictor software.

Use of the power distribution controls will automatically occur within a 5% power/flow buffer zone outside of the plant-specific exclusion region. The plant-specific exclusion region will be similar to the exclusion region, shown in Reference (f), but will be updated for Cycle 18. The LAPUR stability analysis code will be used to evaluate the Cycle 18 power/flow exclusion region using the BWROG methods, approved in Reference (e). The evaluation will include a benchmark to the Cycle 15 exclusion region analysis, submitted in Reference (f). The buffer zone represents an analytical uncertainty of approximately 20% in decay ratio or "stability margin". This analytical uncertainty bounds any uncertainty in the plant parameters important to stability, such as radial power shape, axial power shape, feedwater temperature and xenon concentration. At the start of Cycle 18, VYNPC will implement this 5% power/flow buffer region. When the monitor/predictor is unavailable, VYNPC will not intentionally operate within this 5% power/flow buffer region. However, when the monitor/predictor becomes available, VYNPC will operate up to the exclusion region provided the decay ratio is < 0.8 . Use of the buffer region is similar to the power distribution control Option 4 in the revised BWROG Interim Corrective Action [Reference (i)].

To address Item 1 in Reference (b), VYNPC plans to review and modify, where necessary, its operating procedures and operator training for Option 1-D. Under Item 1 there are two (2) specific requests for action: 1a.) VYNPC should ensure that procedural requirements exist for initiation of a manual scram under all operating conditions when both recirculation pumps trip except if the LTS is approved and implemented; and 1b.) VYNPC should ensure factors important to core stability are controlled through procedures within appropriate limits consistent with the core design, exclusion region and core monitoring capabilities. To address Item 1a, VYNPC will be implementing the LTS Option 1-D for Cycle 18; therefore, a manual scram is not necessary. To address 1b, VYNPC is implementing the 5% power/flow buffer region around the exclusion region where the plant will not intentionally operate when the monitor/predictor is unavailable. This region will ensure any uncertainty in the factors important to core stability are bounded.

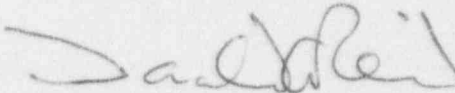
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The schedule provided in Enclosure B is contingent on the NRC approval of Option 1-D, the Vermont Yankee specific Technical Specification proposed change [Reference (g)] and the BWROG reload procedures. Assuming the NRC acceptances are completed within the requested time frame in Enclosure B, Vermont Yankee will implement the LTS Option 1-D by the start of Cycle 18 (currently planned for the Spring of 1995) and expects to have the on-line monitor/predictor fully implemented by January 31, 1996.

We trust that the information provided sufficiently addresses the request for action in the Generic Letter; however, should you have any questions on this matter, please contact us.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORP.

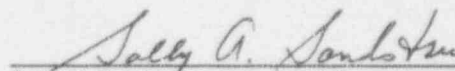


Donald A. Reid
Vice President - Operations

cc: USNRC Project Manager, VYNPS
USNRC Region I Administrator
USNRC Resident Inspector, VYNPS

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

Then personally appeared before me, Donald A. Reid, who, being duly sworn, did state that he is Vice President - Operations of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing document in the name and on behalf of the Vermont Yankee Nuclear Power Corporation and that the statements therein are true to the best of the his knowledge and belief.


Sally A. Sandstrom, Notary Public
My Commission Expires February 10, 1995



ENCLOSURE A

REFERENCES

- (a) License No. DPR-28 (Docket No. 50-271).
- (b) NRC Generic Letter 94-02, NVY 94-116, July 11, 1994.
- (c) Licensing Topical Report, BWR Owner's Group Long-Term Stability Solutions Licensing Methodology, NEDO-31960, General Electric Nuclear Energy, June 1991.
- (d) Licensing Topical Report, BWR Owner's Group Long-Term Solutions Licensing Methodology (Supplement 1), NEDO-31960 Supplement 1, General Electric Nuclear Energy, March 1992.
- (e) Letter, USNRC to L. A. England (BWROG), "Acceptance for Referencing of Topical Reports NEDO-31960 and NEDO-31960 Supplement 1, 'BWR Owner's Group Long-Term Stability Solutions Licensing Methodology' (TAC NO. M75928)," July 12, 1993.
- (f) Letter, VYNPC to USNRC, "Submittal of Vermont Yankee Nuclear Power Station Application of BWROG Thermal Hydraulic Stability Long Term Solution Option 1-D," BVY 93-72, July 7, 1993.
- (g) Letter, VYNPC to USNRC, "Proposed Change No. 173, BWR Thermal Hydraulic Stability and Plant-Specific Information Requirements for BWROG Option 1-D Long Term Stability Solution," BVY 94-36, March 31, 1994.
- (h) Letter, VYNPC to USNRC, "Response to NRC Request for Additional Information on Proposed Change No. 173," BVY 94-90, September 9, 1994.
- (i) Letter, L. A. England (BWROG) to M. J. Virgilio (USNRC), "BWR Owner's Group Guidelines for Stability Interim Corrective Action," June 6, 1994.

ENCLOSURE B

MILESTONE SCHEDULE FOR IMPLEMENTATION OF
LONG TERM STABILITY OPTION 1-D AT VERMONT YANKEE

<u>Description</u>	<u>Date</u>
BWROG CPR Performance Reload Procedure Submittal	4th QTR '94
NRC Approval of Option 1-D	Late Fall '94
NRC Approval of VY Technical Specification Changes	Late Fall '94
VY Submittal of BWROG Exclusion Region Methods Application	1st QTR '95
NRC Approval of BWROG Reload Procedure and VY Exclusion Region Application	3rd QTR '95
VY Prepares Procedures and Trains Operators on Option 1-D	1st QTR '95
Choose Monitor/Predictor Vendor	4th QTR '94
Vendor Delivers Monitor/Predictor	November 30, 1995
VYNPC Site Acceptance Testing Starts	December 18, 1995
VYNPC Expects Monitor/Predictor Operational	January 31, 1996