

March 22, 2001

Mr. Michael A. Balduzzi
Vice President, Operations
Vermont Yankee Nuclear Power Corporation
185 Old Ferry Road
P.O. Box 7002
Brattleboro, VT 05302-7002

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - REVIEW OF REQUEST
FOR AN ALTERNATE INSPECTION FREQUENCY OF OVERLAY REPAIRED
WELDS (TAC NO. MB0469)

Dear Mr. Balduzzi:

By letters dated October 31, 2000, and March 5 and 12, 2001, Vermont Yankee Nuclear Power Corporation (VYNPC) requested NRC approval for an alternate inspection frequency of overlay repaired welds (Intergranular Stress Corrosion Cracking (IGSCC) Category E welds). Specifically, VYNPC requested to inspect the overlay repaired welds at a frequency of 25 percent of the population every 10 years under normal water chemistry conditions in accordance with the NRC approved guidelines in Boiling Water Reactor Vessel Internals Project-75 (BWRVIP), "BWR Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules."

There are two IGSCC Category E welds (core spray nozzle to safe-end dissimilar metal welds) at Vermont Yankee Nuclear Power Station (VY), which were installed in 1986 using Inconel 82 material. These welds had been inspected every other refueling outage in accordance with the Generic Letter (GL) 88-01 schedule. Due to the good operating experience and improved water chemistry in the current BWR fleet, the GL 88-01 inspection schedules were revised in BWRVIP-75. The staff approved guidelines in BWRVIP-75 are provided in the staff's safety evaluation report (SER) dated July 28, 2000. For the inspection of IGSCC Category E welds under the operating condition of normal water chemistry, the inspection schedule could be reduced to 25 percent of the population every 10 years when the conditions provided in the staff's SER for BWRVIP-75 are met.

VY Technical Specifications Section 4.6.E.1 states: "Inservice inspection of piping, identified in NRC Generic Letter 88-01, shall be performed in accordance with the staff positions on schedule, methods, and personnel and sample expansion included in the Generic Letter or in accordance with alternative measures approved by the staff."

The staff's determination is based on the following considerations.

- (1) The weld overlays are made of Inconel 82 material. Inconel 82 is considered resistant to IGSCC.

- (2) A pre-service inspection and six inservice examinations were applied to these welds. No indication of crack growth or initiation of new cracking was detected.
- (3) The BWR water chemistry guidelines in BWRVIP-29, "BWR Water Chemistry Guidelines-1996 Revision," require the reactor coolant conductivity not to exceed 0.3 uS/cm. VYNPC reported that the monthly average reactor coolant conductivity in the last 3 years and 2 months did not exceed 0.113 uS/cm.
- (4) VYNPC provided the staff the following information in a conference call held on March 7, 2001, and in letter dated March 12, 2001:
 - (i) Weld overlays installed on the subject welds are full structural overlays.
 - (ii) The reactor water chemistry control program implemented at VY follows the Electric Power Research Institute water chemistry guidelines in BWRVIP-29.

Based on the staff's review of the licensee's submittals the staff has determined that the licensee's request to inspect the subject overlay repaired welds at a frequency of 25 percent of the population is acceptable, because the request met the staff approved guidelines in BWRVIP-75.

This completes review efforts under TAC No. MB0469.

Sincerely,

/RA/

Robert M. Pulsifer, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-271

cc: See next page

- (2) A pre-service inspection and six inservice examinations were applied to these welds. No indication of crack growth or initiation of new cracking was detected.
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- (4) VYNPC provided the staff the following information in a conference call held on March 7, 2001, and in letter dated March 12, 2001:
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Robert M. Pulsifer, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
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Vermont Yankee Nuclear Power Station

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