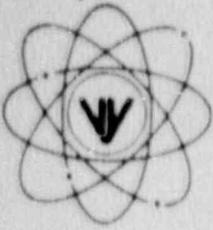


VERMONT YANKEE NUCLEAR POWER CORPORATION



Ferry Road, Brattleboro, VT 05301-7002

BVY 90-097

REC'D TO

ENGINEERING OFFICE

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October 4, 1990

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

References:

- a) License No. DPR-28 (Docket No. 50-271)
- b) Letter, VYNPC to USNRC, BVY 89-31, dated 3/28/89
- c) Letter, USNRC to VYNPC, NVE 89-67, dated 4/5/89
- d) Letter, USNRC to VYNPC, NVE 90-73, dated 4/19/90

Dear Sir:

Subject: Feedwater Check Valve Flaw Evaluation

During the 1989 refueling outage, flaws were observed in the approximately one inch wide Stellite wear pads during a visual examination of the internals of a feedwater check valve (there are three feedwater check valves in series in each of two feedwater lines). All four check valves of similar lift check design were ultrasonically inspected to determine the flaw depth. The deepest flaw detected was 0.65 inches deep in a nominal two (2) inch thick valve wall (valve 28B on the attached drawing).

Since this flaw was in excess of ASME Section XI acceptance criteria a flaw evaluation was performed and submitted to the NRC for approval via reference (b). The flaw evaluation demonstrated that the flaw met all applicable criteria for continued operation; it was further demonstrated that even if the flaw propagated through wall the structural integrity of the valve would be assured. USNRC approval of operation was received in references (c) and (d).

During the current refueling outage we have replaced the two inboard check valves (valves 28A and 28B) with swing check valves (the same design as the existing first outside containment valve in each feedwater line, valves 27A and 96A). Additional ultrasonic examination of the two remaining lift check valves (valves 27B and 96B) was also performed. The ultrasonic examinations were performed using larger, lower frequency transducers with improved capabilities for examining cast carbon steel. These inspections have identified flaws in check valves 96B and 27B. In valve 96B, the maximum flaw depth was 0.15 inches, which is within the acceptance limits of ASME Section XI. In valve 27B, the maximum flaw depth was 0.50 inches. (The wall thickness at the location of the 0.50 inch flaw is 2.6 inches.) The flaw is contained totally within the width of the Stellite wear pad which was the same condition that existed in valve 28B which was evaluated in 1989.

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As stated above, valve 27B is identical to valve 28B that was considered in the previous flaw evaluation and the flaw in 27B is smaller than the flaw evaluated and accepted by the NRC in the previous report.

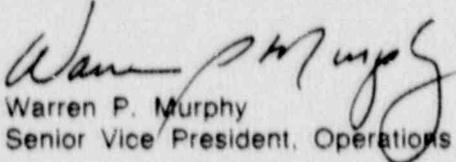
Based on the above discussion Vermont Yankee concludes that the flaw in the feedwater check valve 27B is bounded by the previous analysis and NRC approval, and it is our plan to operate for one additional cycle, at which time we will repair or replace valve 27B. Therefore, in accordance with NRC and ASME requirements, Vermont Yankee hereby requests NRC approval of this action.

As an added degree of assurance we will install leak monitoring tape on valve 27B, since this valve has a flaw in excess of ASME Section XI acceptance criteria, as was done on valve 28B last operating cycle. This system is capable of detecting very small amounts of leakage (0.1 gpm or greater) and is provided with an alarm in the main control room. This system is in addition to the normal leak detection system that monitors the steam tunnel area.

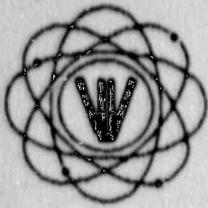
We trust that the above information is sufficient for NRC to evaluate our request. If more information is required, please contact this office.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION


Warren P. Murphy
Senior Vice President, Operations

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



Vermont Yankee Feedwater Check Valves

