VERMONT YANKEE
NUCLEAR POWER CORPORATION

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FVY 88-22

REPLY TO
ENGINEERING OFFICE
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TELEPHONE 617-872-8100

March 25, 1988

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

References:
a) License No. DPR-28 (Docket No. 50-271)
b) Letter, USNRC to VYNPC, NVY 87-23, Inspection Report No. 50-271/86-25 and Notice of Violation, dated 2/6/87
c) Letter, VYNPC to USNRC, FVY 87-30, Inspection Report No. 50-271/86-25, dated 3/12/87
d) Letter, USNRC to VYNPC, NVY 87-63, Inspection Report No. 50-271/87-06, dated 4/23/87
e) Letter, USNRC to VYNPC, NVY 87-100, Inspection Report No. 50-271/87-09, dated 6/25/87
f) Letter, USNRC to VYNPC, NVY 88-28, Inspection Report No. 50-271/87-16, dated 2/25/88
g) Vermont Yankee Procedure, AP 4024, Rev. 5, Inservice Testing, dated 1/4/88
h) ASME Section XI, Subsections IWP-3220 and 3230, 1980 Edition, Winter 1980 Addenda

Dear Sir:

Subject: Supplemental Response to Inspection Report No. 50-271/86-25, Notice of Violation

Background

The subject violation concerns our differing view in the interpretation and implementation of the provisions in ASME Section XI, Subsections IWP-3220 and 3230 relating to the IST vibration testing of the Core Spray B Pump on October 7 and November 25, 1986. The original Notice of Violation was issued on February 6, 1987 as part of Reference b). Reference c) provided the Vermont Yankee response.

Reference d) provided the NRC Resident Inspector's position that our response had provided no new information but left the item open pending further review. Reference e) revisited the issue and discussed in detail the rationale supporting the original Notice of Violation. No concensus was achieved between the Resident Inspector and Vermont Yankee regarding the acceptance of the NRC staff position relating to the use of the 96-hour time allowed for the analysis of data per IWP-3220. Vermont Yankee requested that the Resident Inspector review this matter further with NRR.

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Subsequently, NRR reaffirmed their original position and this information was made available to Vermont Yankee on October 9, 1987 and was discussed with both the Plant Manager and Operations Superintendent.

In light of the above, Reference f) states that the Resident Inspector considers the issue closed but also feels our response is inadequate given the reaffirmed staff position. The item remains open pending further Vermont Yankee review and implementation of revised corrective actions.

NRC Staff Position

Reference e) states the following:

"The Section XI code, instead of requiring the use of highly sophisticated vibration spectrum analyzer equipment, allows the use of much simpler, highly portable equipment by qualified operators to monitor vibration levels as a general indicator of the performance of operating equipment. The program is sufficient to detect the onset of trends or conditions that could jeopardize pump operability. The intent of the code is that should IST measurements detect vibration levels at the 'alert' range, actions should be taken to address the problem as a maintenance item per IWP 3230(a) and 'double the test frequency until the cause of the condition is determined and the condition corrected.' Similarly, should the IST measurements find vibrations to be in the 'required action' range, and absent sound evidence that the test data just taken was faulty, then the prudent and required action per IWP 3230(c) is to declare the pump inoperable and to not return it to service until the condition is corrected."

"The inspector noted that the intent of the code was to allow the licensee to discredit a data set if the instruments used to gather the data are suspected of being faulty. In this case, the approach should be to disregard the data and to rerun the test with known good instruments that are in calibration. This is a reasonable approach when (or if), as the licensee indicated, 'the shift supervisor had reason to believe the data taken did not represent the true condition of the pump for some reason, such as a transcription error, instrument malfunction, operator error in using or reading the instrument.' However, given that the prerequisite for each test run is that the measurements be made by qualified personnel with good instruments that are in calibration, then to discredit a test run the shift supervisor must have solid evidence that the measurement was faulty and should not invoke the provision of IWP 3230(d) without due cause."

"For the core spray pump testing conducted in the Fall of 1986, the operators who took the data were qualified and used good equipment that was 'in calibration'. The instrumentation repeatedly showed that the 'B' core spray pump had a vibration problem that was classified at the 'alert' or 'required action' level based on the baseline vibration of the pump. The licensee's evaluation of the 'status' of the pump did not involve recalibration of the IST

instruments and rerunning of the test. Instead, considerable effort was expended using maintenance personnel and consultants with sophisticated vibration spectrum analysis equipment to ultimately determine that the pump was in good operating condition (except for the pump upper motor bearing), and that the IST vibration measurement equipment was too sensitive and not well suited for the program. This level of effort went beyond the follow-up action suggested in IWP 3230(d) to 'recalibrate and rerun with the IST measurement equipment.' This effort is more appropriately considered as part of a corrective action plan per IWP 3230(c), which requires that the pump be either 'replaced, repaired, or an analysis done to demonstrate that the condition does not impair the pump operability and that the pump will still fulfill its function.' This was the ultimate conclusion for the core spray pump."

Response

Admission or Denial of the Alleged Violation

As previously stated in Reference c), we believe that our previous practice was in full compliance with the ASME Code. However, we agree to enhance our program to be consistent with the NRC interpretation of this issue.

Additional Compensatory Actions Which Have Been Taken

Based on NRC interpretation, we have taken a more conservative posture regarding the actions taken should pump vibration enter the "Required Action Range". Specifically, Reference g) now states the following:

- After completion of the testing, the results must be assessed within 96 hours.

- If the Shift Supervisor has good reason to believe the readings may not represent the true condition of the pump, such as transcription error, instrument malfunction, or operator error in using or reading the instrument, he can indicate he has rejected the data and the reason(s) why and retake the data.

- If the results from the pump testing indicate that the pump is in the "ALERT" range:

    - OPS will immediately initiate an MR and forward it to Maintenance (further testing of the pump is discretionary).

    - Maintenance will develop a plan to identify or fix the problem, or justify new reference parameters prior to the next test (two weeks).

- o Based on the results of the next test, Maintenance will identify any other actions necessary to correct the problem and remove the pump from the "ALERT" range.

- If the results from the pump testing indicate that the pump is in the "Required Action" range:

  - o The pump shall immediately be declared inoperable.

  - o OPS will immediately initiate an MR and forward it to Maintenance (further testing of the pump is discretionary).

  - o Maintenance will develop a plan to identify and fix the problem, or justify new reference parameters.

In addition to the above procedural revision, Vermont Yankee has upgraded our vibration measurement instrumentation to a computer based system. This system will allow for the measurement of vibration with greater precision and reliability. The system will produce not only the overall peak to peak displacement value required by IWP-4510, but also vibration spectra for displacement, velocity and acceleration from the same data. This additional information will provide the solid evidence that the measurement does represent the true condition of the pump such that the Shift Supervisor will have clear due cause to invoke the provision of IWP 3230(d).

We trust that this information is satisfactory; however, should you have any questions or require additional information concerning this matter, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Warren P. Murphy
Vice President and
Manager of Operations

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cc: USNRC Region I, Regional Administrator
USNRC Resident Inspector, VYNPS