September 17, 1998

Mr. Gregory A. Maret
Director of Operations
Vermont Yankee Nuclear Power Corporation
185 Old Ferry Road
Brattleboro, Vermont 05301

SUBJECT: NRC INSPECTION REPORT 50-271/97-10, NOTICE OF VIOLATION, AND EXERCISE OF DISCRETION

Dear Mr. Reid:

This refers to your March 6, 1998 correspondence, in response to our letter dated February 5, 1998, regarding Vermont Yankee. This correspondence dealt with Notice of Violation 50-271/97-10 which identified three (3) Severity Level IV violations.

Thank you for informing us of your corrective actions. We have reviewed this matter in accordance with NRC Inspection Manual Procedure 92903, "Follow-up - Engineering." Based upon our preliminary in-office review of your staff's determination of the causes for these violations, it appears that the stated corrective actions are appropriate. These corrective actions will be examined during a future inspection to assess their overall effectiveness.

Your cooperation with us is appreciated.

Sincerely,

Original Signed by: R. Summers

Curtis J. Cowgill, Chief
Reactor Projects, Branch 5
Division of Reactor Projects

Docket No. 50-271

IE:01

cc w/o cy of Licensee's Response Letter:
R. McCullough, Operating Experience Coordinator - Vermont Yankee
G. Sen, Licensing Manager, Vermont Yankee Nuclear Power Corporation

cc w/cy of Licensee's Response Letter:
D. Rapaport, Director, Vermont Public Interest Research Group, Inc.
D. Tefft, Administrator, Bureau of Radiological Health, State of New Hampshire
Chief, Safety Unit, Office of the Attorney General, Commonwealth of Massachusetts
D. Lewis, Esquire
G. Bisbee, Esquire
J. Block, Esquire
T. Rapone, Massachusetts Executive Office of Public Safety
D. Katz, Citizens Awareness Network (CAN)
M. Daley, New England Coalition on Nuclear Pollution, Inc. (NECNP)
State of New Hampshire, SLO Designee
State of Vermont, SLO Designee
Commonwealth of Massachusetts, SLO Designee

Distribution w/encl:
Region I Docket Room (with concurrences)
PUBLIC
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
H. Miller, RA/W. Axelson, DRA
C. Cowgill, DRP
B. Summers, DRP
C. O'Daniell, DRP
B. McCabe, OEDO
R. Croteau, NRR
C. Thomas, NRR (COT)
R. Correia, NRR
F. Talbot, NRR
Inspection Program Branch, NRR (IPAS)
DOCDESK

DOCUMENT NAME: G:\BRANCH5\RPLY-LTR\VY9710.RES
To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI/DRP		RI/DRP		/					
NAME	RSummers		CCowgill							
DATE	09/10/98		09/17/98		09/ /98		09/ /98		09/ /98	

OFFICIAL RECORD COPY

VERMONT YANKEE
NUCLEAR POWER CORPORATION

185 Old Ferry Road, Brattleboro, VT 05301-7002
(802) 257-5271

March 6, 1998
BVY 98-33

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

References: (a) Letter, USNRC to VYNPC, NRC Inspection Report 50-271/97-10, Notice of Violation and Exercise of Discretion, NVY 98-14, dated 2/5/98
(b) Letter, USNRC to VYNPC, Vermont Yankee Design Inspection, NRC Inspection Report No. 50-271/97-201, NVY 97-130, dated 8/27/97

SUBJECT: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Reply to a Notice of Violation - NRC Inspection Report 50-271/97-10

This letter is written in response to Reference (a), which documents the findings of a special inspection conducted from September 29 to November 20, 1997. The special inspection identified three (3) Severity Level IV violations. Our responses to the violations are provided below.

VIOLATION A

10 CFR 50, Appendix B, Criterion XI, Test Control, requires that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Test procedures shall include provisions for assuring that adequate test instrumentation is available and used. Test results shall be documented and evaluated to assure that test requirements have been satisfied.

Contrary to the above, prior to April 20, 1995, the licensee failed to assure that the test instruments used in RHR heat exchanger performance testing were adequate to assure the test requirements were satisfied. Specifically, (1) the flow instruments used during the testing were calibrated at the wrong flow condition; and (2) temperature instrument accuracy was such that small changes in temperature across the heat exchanger led to large uncertainties in the test results.

RESPONSE

Reason for the Violation

Vermont Yankee does not contest this violation. The test methodology attempted to utilize existing installed instrumentation without adequately addressing calibration, accuracy and uncertainty effects caused by the differences in test conditions from normal operating conditions. The detailed calculations used to develop and generate the test acceptance curves included conservative assumptions for random error uncertainty, but did not sufficiently address bias error effects on uncertainty. The test methodology was developed with detailed graphical acceptance curves, which essentially became a pass/fail acceptance criteria for the test. This, coupled with the lack of an objective test ownership and oversight responsibility, led to a failure to identify and address a substantial test bias caused by the transient nature of the test and instrumentation response.

Corrective Steps That Have Been Taken and the Results Achieved

Vermont Yankee developed a Basis for Maintaining Operation (BMO) which assessed and documented the operability of the RHR heat exchanger. In addition to the corrective actions identified in the BMO, we conducted an extensive study to identify and quantify the extent of the flow and temperature biases in the test methodology. This was completed and documented on August 14, 1997. This study concluded that the quantification of the test biases did not substantially affect the overall test results and that the RHR heat exchanger satisfied its design basis heat transfer requirements.

Vermont Yankee also assigned the Service Water (SW) System Engineer to be responsible for future acceptance testing of SW heat exchangers, which includes the RHR heat exchangers. Incumbent with this ownership is a clear understanding of the importance of proper development, conduct and critical evaluation of test results to continued operability evaluations of the subject heat exchanger. Ownership was a critical missing aspect in the conduct of the previous testing program. Management expectations identifying responsibilities for developing, conducting and evaluating heat exchanger test results have been generated and will be used in future testing.

Corrective Steps That Will Be Taken to Avoid Further Violations

Vermont Yankee has internally committed to performing new baseline tests on the RHR and Spent Fuel Pool Cooling (SFPC) heat exchangers with an independent, industry expert utilizing supplemental, high accuracy instrumentation. Performance of baseline testing with independent consulting expertise will result in a program that will ensure initial and ongoing testing compliance. Additional testing of the RHR heat exchanger(s) is currently planned for our refueling outage beginning in March 1998 and the SFPC heat exchanger shortly following the outage. A revised differential temperature testing methodology will be implemented for the corner room coolers, RRU 7 and 8, currently scheduled for March 1998. This test method will also utilize supplemental high accuracy test instrumentation.

Date When Full Compliance Will Be Achieved

Compliance was achieved on August 14, 1997 when a study concluded that the quantification of test biases did not substantially affect the overall test results and that the RHR heat exchanger satisfied its design basis heat transfer requirements.

VIOLATION B

10 CFR 50.59(b)(1) requires that the licensee shall maintain records of changes in the facility to the extent that these changes constitute changes in the facility as described in the safety analysis report and these records must include a written safety evaluation which provides the basis for the determination that the change does not involve an unreviewed safety question.

Contrary to the above, on December 30, 1994, the licensee changed the facility as described in the FSAR and failed to perform a written safety evaluation to determine that the change did not involve an unreviewed safety question (USQ). Specifically, FSAR Section 10.7.6, Safety Evaluation, states that the RHR Service Water Pump spaces are provided with space coolers (RRU 5,6,7 and 8) to prevent overheating of the safety-related pump motors during long periods of operation. The licensee changed the classification of space coolers RRU 5 and 6 from safety-related to nonsafety-related without a written safety evaluation to determine that no unreviewed safety question existed.

RESPONSE

Reason for the Violation

Vermont Yankee does not contest this violation. Corner room coolers RRU-5,6,7 and 8 are located in the ECCS corner rooms which contain the RHRSW pumps, the ECCS pumps and associated instrumentation. To mitigate postulated accidents, it must be determined that the pumps and associated equipment can withstand the post-accident environment while performing their intended functions. To evaluate the ECCS corner room heat load, a post accident (LOCA) heat removal analysis was performed. It was concluded that the long term cooling requirements could be satisfied without taking credit for the heat removal capability of the RRU 5 and 6 coolers. Since the heat removal capability of the RRU 5 and 6 coolers was not required, the heat removal safety function was downgraded from Safety Class to Non-Nuclear Safety (NNS) class. Even though the heat removal function was revised to NNS, the cooling units remained Safety Class 3 because of the service water pressure boundary interface. There was a lack of recognition that a 10CFR50.59 Safety Evaluation was necessary as part of this partial downgrade. Additionally, no formal process ensured this activity was correctly and completely documented.

Corrective Steps That Have Been Taken and the Results Achieved

1) A Safety Evaluation was completed in support of this safety function downgrade on July 2, 1997.

2) The non-safety related cooling function for RRU 5 and 6 has been documented in the SW Design Basis Document (DBD).

3) This event and others of a similar nature were collectively assessed and are being addressed by the Configuration Management Improvement Project (CMIP) discussed below.

Corrective Steps That Will Be Taken to Avoid Further Violations

The FSAR will be revised to incorporate this revised heat removal function safety classification for RRUs 5 & 6. This will be included in the next scheduled FSAR revision.

Based upon the evaluation of several related events prior to the Reference (b) inspection, Vermont Yankee initiated a Configuration Management Improvement Program (CMIP) to improve the station's design control and configuration management processes. A Project Plan has been established to enhance and streamline the configuration management processes at Vermont Yankee and facilitate the use and maintenance of design basis documentation. The CMIP basically consists of:

- Design Basis Document (DBD) development
- Validation of DBDs versus Plant
- Process Improvements, including integration of procedures, DBDs, Improved Technical Specification (ITS) program, accessibility of engineering and licensing information.
- FSAR Verification
- Open item resolution from all the above

This project is the responsibility of a project manager who reports directly to the Design Engineering - Nuclear Services Manager. This project is a long term improvement process that will remain a "living" program through the remaining plant lifetime.

One of the Process Improvements is the generation of a process that will address design basis changes to the facility that do not result in physical modifications. This procedure will be utilized for the same type of issue raised in the violation and prevent recurrence of similar violations in the future.

Date When Full Compliance Will Be Achieved

Full compliance was achieved when a 10CFR50.59 Safety Evaluation was approved on July 2, 1997 downgrading the heat removal function of RRUs 5 & 6 to a non-safety related function.

VIOLATION C

10 CFR 50, Appendix B, Criterion XVII, Quality Assurance Records, requires that sufficient records shall be maintained to furnish evidence of activities affecting quality. The records shall include records of inspections and tests.

Contrary to the above, prior to June 10, 1997, the licensee failed to maintain su at records, in that technical specification surveillance test records for the main station battery service test performed on September 14, 1996, in accordance with Procedure OP-4125, "Main Battery Performance/Service Test," Rev.6, did not contain the printout of test data showing individual cell voltage (ICV) and battery terminal voltage readings.

RESPONSE

Reason For The Violation

Vermont Yankee does not contest this violation. The records were appropriately generated during the test and reviewed to insure the successful completion of the battery service test. The records were subsequently lost between the engineer's review of the completed work package and transfer of the records to the document control center for long term retention. In addition, the test equipment would have generated a test stoppage had the parameters fallen outside of allowable values. Our initial assessment of this event determined the apparent cause to be failure to follow procedure by personnel who are tasked with handling Maintenance QA records.

Corrective Steps That Have Been Taken and the Results Achieved

Personnel involved with this event were made aware of he importance of the computer printouts as part of the procedure QA records.

Searches of Maintenance Engineering (including computer disks), document control and work control temporary QA file areas were conducted in an effort to locate or re-create the data. This effort was unsuccessful. It should be noted that the computer disks are not maintained as QA records. The procedure requires a paper copy be attached to the procedure data sheets for retention as a QA record.

Since this violation was received, a new higher level Event Report (ER) was initiated to investigate, assess for similar conditions and determine if any additional corrective actions are warranted.

Corrective Steps That Will be Taken to Avoid Further Violations

In addition, the following actions are planned to insure proper control of all Maintenance QA records:

(1) A self-assessment will be performed of the training of administrative staff for the control, handling and transmittal of Maintenance QA records. This is expected to be complete by May 31, 1998.

(2) Maintenance will evaluate the handling practices of in-process work packages to insure all necessary controls are in place to prevent a similar loss of documentation. This will include an evaluation of other data types (computer printouts, field notes, etc.) that are potentially vulnerable to this type of occurrence. This is expected to be complete by July 31, 1998.

(3) The control of computer disks containing backup data for test results will be evaluated. This is expected to be complete by July 31, 1998.

Date When Full Compliance Will be Achieved

Compliance has been achieved by review of the test data and signoff by the cognizant engineer, subsequent review of the computer file with your inspector and completion of the short term corrective actions.

The technical and administrative staff responsible for work package use and closeout are aware of the importance of these records as part of the QA files. We believe this to be an isolated instance. Therefore, Vermont Yankee's controls for retention of QA records are in compliance with 10CFR50, Appendix B and no further occurrences are expected. The additional actions planned will help to insure that Vermont Yankee is not vulnerable in other areas and that all personnel who work with the records are aware of their importance and procedure requirements for their control.

We trust that the enclosed information is responsive to your concerns, however, should you have any questions or require additional information, please contact us.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Robert J. Wanczyk

for Donald A. Reid
Senior Vice President, Operations

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS
Vermont Department of Public Service