October 26, 1998

EAs 98-453, 98-454

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

SUBJECT: NRC INTEGRATED INSPECTION REPORT 50-271/98-80
REPLY TO LICENSEE RESPONSE TO NOTICE OF VIOLATION

Dear Mr. Maret:

This letter refers to your August 17, 1998, correspondence, in response to our letter, dated July 16, 1998, regarding the Vermont Yankee nuclear power plant. Five violations were identified in the referenced inspection report and we have reviewed your response to those violations. We note that you have contested two of the five violations and have provided information to support that conclusion. We also have reviewed your assessment and corrective actions for the three violations that are not contested. The identified causes and proposed corrective actions appear to be appropriate for the violations. The effectiveness of those corrective actions will be reviewed in a future inspection.

Regarding the 10 CFR 50.59 violation (Violation 1), we agree with your position that the radiological dose consequences subject to 10 CFR 50.59 are those that could adversely impact the health and safety of the public. The referenced enforcement action at Centerior Service Company (EA 97-430) is a relevant precedent for this conclusion. On that basis, we withdraw the violation. We also accept the corrective action that you took to ensure that the postulated committed dose to the operators while performing Control Room HVAC activities from a post-LOCA condition were properly bounded by appropriate post-LOCA dose analysis. However, the NRC is still concerned that your compensatory measures were not fully evaluated when you conducted the safety evaluation for the change in question. This concern does not rise to a level that would normally result in enforcement.

Regarding the 10 CFR 50.73 violation (Violation 3), we agree with your position that the identified condition regarding the control room ventilation system was not reportable, based upon the additional information provided in your response. This violation is therefore withdrawn.

IE01

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your licensed program.

Your cooperation with us is appreciated.

Sincerely,

ORIGINAL SIGNED BY:

James T. Wiggins, Director
Division of Reactor Safety

Docket No. 50-271

cc w/o cy of Licensee Response Letter:
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G. Sen, Licensing Manager, Vermont Yankee Nuclear Power Corporation

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August 17, 1998
BVY 98-123

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

References:
(a) Letter, USNRC to VYNPC, "NRC Special Inspection Report 50-271/98-80, Notice of Violation and Exercise of Enforcement Discretion," NVY 98-99, dated July 16, 1998.
(b) Letter, VYNPC to USNRC, "Vermont Yankee Response to NRC Generic Letter 88-14," BVY 89-17, dated February 16, 1989.
(c) Letter, USNRC to VYNPC, "Instrument Air Supply Problems Affecting Safety-Related Equipment (Generic Letter 88-14)," NVY 88-177, dated August 8, 1988.
(d) Letter, VYNPC to USNRC, "Response to Request for Additional Information Regarding NUREG-0737 Habitability Requirements for the Vermont Yankee Nuclear Power Station," BVY 94-02, dated January 10, 1994.

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Reply to a Notice of Violation – NRC Inspection Report 50-271/98-80

This letter is written in response to Reference (a), which documents the findings of an inspection conducted from May 18 to June 5, 1998. The inspection identified five violations of regulatory requirements. Our response to the violations is provided below.

VIOLATION 1

10 CFR 50.59, Changes, tests and experiments, specifies that the licensee may make changes to its facility and procedures as described in the safety analysis report and conduct tests or experiments not described in the safety analysis report without prior Commission approval, provided the change does not involve a change in the technical specifications or an unreviewed safety question (USQ); and requires the licensee to maintain records of changes in the facility, including written safety evaluations providing the bases for the determination that the change does not involve an USQ.

Contrary to the above, in 1996, the safety evaluation performed by the licensee to support a temporary modification to the Main Control Room HVAC system, as described in section 10.12 of the FSAR, did not provide a sufficient basis to determine that the change did not involve an USQ. Specifically, the licensee discovered the Control Room HVAC would not function as expected on the loss of nonsafety-related instrument air. A temporary

modification (TM 96-043) was installed to allow for operation of the chilled water valves and dampers during a loss of instrument air and procedures were revised to help mitigate the degraded condition. The safety evaluation for the temporary modification failed to address the impact of required operator actions.

This is a Severity Level IV Violation (Supplement I).

RESPONSE:

Basis for Disputing the Violation:

Vermont Yankee (VY) does not concur that a violation of 10CFR50.59 requirements exists, for the following reasons, and requests that the staff reconsider this portion of the Notice of Violation.

The Notice of Violation cites a failure to "address the impact of the required operator actions" arising from the compensatory measures established by the temporary modification. The only discussion of risk involving operator actions in the inspection report occurs in Section E2.4.b of the Report Details, which states:

> "Because the manual actions required by the operators would expose them to higher radiation levels than if they would remain in the control room, the consequences of an accident may be increased."

And, in a later paragraph:

> "Therefore, there was not a sufficient basis to conclude that the change did not increase the consequences to the control room operator."

Based on the above, VY interprets the NRC's concern as focusing on the dose consequences to the control room operators when performing the compensatory actions, and believes that the regulatory basis for the violation is not substantiated.

The radiological dose consequences subject to regulation under 10CFR50.59 are those that could adversely impact the health and safety of the public as the result of a design basis accident (DBA). An increase in radiation exposure to the on-site workers performing the short-duration compensatory actions discussed in this inspection report will not contribute to an increase in the consequences of a DBA to the public health and safety.

An apparent precedent for the above basis exists in previous NRC correspondence with another licensee. The NRC Office of Enforcement has acknowledged the validity of this conclusion in a letter to Centerior Service Company (EA 97-430) dated April 9, 1998, in which it was stated, under "NRC Evaluation of Licensee's Reason 3" in the Appendix:

> "The NRC determined that an increase in dose consequences, as used in 10CFR50.59, refers to the consequences of a design basis accident, and not to increased radiation dose to plant staff from in-plant recovery actions. NRC agrees that the change in operator actions did not involve a potential increase in consequences of a design basis accident."

The projected maximum dose for the activity evaluated in EA 97-430 was 4.4 REM for a single activity spanning approximately 20 minutes; VY projects a worst-case whole-body gamma dose (see below) of less than 3 REM for a similar one-time, 30-minute-long activity. The dose consequences of VY's compensatory measures are less severe than those considered by the NRC in their Centerior evaluation. Therefore, VY does not agree that a violation of 10CFR50.59 requirements occurred since the consequences of an accident would not be increased.

Corrective Steps That Have Been Taken and the Results Achieved:

Although VY contests this violation, we maintain a strong commitment to ALARA principles in assessing and managing the dose consequences of on-site work activities. Our initial safety evaluation for the temporary modification includes a qualitative judgement that ". . . additional action for initiating control room HVAC would be bounded by the conservative evaluations for control room operator dose," but discussion with the NRC inspectors suggested the need for a more quantitative assessment. Consequently, we completed a formal engineering analysis to determine whether the post-LOCA control room dose analysis documented in existing calculations effectively bounds the radiological conditions expected to exist during performance of the compensatory action. The results of the evaluation are summarized below.

The radiological dose consequences of taking manual action to establish control room cooling post-LOCA have been evaluated and found to be enveloped by the post-LOCA control room dose analysis documented in current calculations. The dose in the shielded Technical Support Center is projected to be a maximum of 4.7 REM, 30 days, total whole body gamma. Engineering analysis has calculated a worst case whole body gamma dose of less than 3 REM for a one-time 30 minute activity to open the selected Control Room (CR) HVAC fan isolation damper(s); therefore, the activity is considered to be within the analyzed envelope.

Corrective Steps That Will Be Taken to Avoid Further Violations:

VY believes that no additional corrective actions are necessary at this time.

Date When Full Compliance Will Be Achieved:

Based on the above, Vermont Yankee believes that we were not in violation of the requirements of 10CFR50.59 relative to this event.

VIOLATION 2

10 CFR Part 50 Appendix B, Criterion XVI, Corrective Action, states that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Vermont Yankee (VY) administrative procedure AP 0009, Revision 3, Event Report, describes the licensee's process used to assess events resulting in adverse conditions, problems or deficiencies affecting VY to initiate the appropriate level of corrective action.

Section C states, "Operability concerns resulting from non-conforming plant equipment are assessed using the BMO [Basis for Maintaining Operation] process to determine the impact of continued operation with potentially degraded equipment." Section J requires that the event report shall have a list of all root and contributing causes.

Contrary to the above, between 1989 and June 5, 1998, Vermont Yankee failed to identify and adequately correct a condition adverse to quality, in that the control room ventilation system was subject to a failure on loss of nonsafety instrument air. VY did not recognize in the evaluation performed in response to Generic Letter 88-14, "Instrument Air Supply Problems Affecting Safety-Related Equipment," that the control room ventilation system dampers and chilled water valves were subject to failure on loss of nonsafety instrument air. The licensee identified this condition on October 18, 1996; however, the root cause evaluation for the condition was not comprehensive in that a review for similar failures was not conducted. Additionally, VY failed to perform the required operability determination when the condition was identified in 1996.

This is a Severity Level IV Violation (Supplement I).

RESPONSE:

Reason For the Violation:

Vermont Yankee does not contest this violation. Although each element of the violation affects the same set of control room ventilation (CRV) dampers and the same valve, the violation is separated into three distinct issues since each issue is the result of a different set of circumstances or actions. For the purpose of this response, the violation described above is comprised of the following three independent issues:

1. VY failed to recognize CRV problems immediately following issuance of GL 88-14;
2. Upon recognition in 1996, VY failed to perform a comprehensive root cause evaluation, and;
3. Upon recognition in 1996, VY failed to document the operability assessment via a BMO.

The first issue was caused by lack of appropriate detail in design-basis drawings used for technical review of GL 88-14. The second issue was caused by too narrow a scope of review established by the Root Cause Investigator performing the investigation of this event. The third issue was caused by a lack of recognition that the discrepancy between the configuration installed by the TM and the FSAR description of the system constituted a potentially degraded condition requiring a BMO as stipulated in AP 0009.

The following is a detailed description of the reason for each aspect of the violation.

1. During a 1989 review of the instrument air supply to safety-related equipment, as requested by GL 88-14, VY failed to discover that the safety class 3 (SC-3) SCW-46A valve and the SAC-1A/B dampers would fail in such a way that cooling to the control room would be lost on a loss of instrument air. Although VY established a project team to perform a detailed design and operations verification (per NUREG 1275, Vol. 2) of the instrument air system in accordance with GL 88-14, the impact on CR HVAC equipment was missed.

The cause of this event was a lack of detail in the applicable Piping and Instrument Drawings (P&IDs), which failed to show the air lines and controls associated with the affected equipment. This lack of detail misled the project team during the review of the CR HVAC system by failing to identify the air-operated portions of the system. The drawing containing the CR HVAC system was reviewed and documentation of the review exists. However, the team failed to identify the SCW-46A valve and the SAC-1A/B dampers as air-operated components performing a safety-related function, and as a result did not recognize at the time of the review that these components would fail in such a way that cooling to the control room would be lost on a loss of instrument air. VY considers this to be an isolated incident that is not indicative of a generic weakness in our GL 88-14 review.

2. During investigation of a 1996 Event Report and a subsequent IST program review, VY discovered that the SCW-46A valve and the SAC-1A/B dampers would fail in such a way that cooling to the control room would be lost on a loss of instrument air. Upon this discovery, a new Event Report was generated and a Root Cause Investigator was assigned to perform the root cause analysis of the event. The Root Cause Investigator had received training consistent with the level of training required for a Root Cause Investigator at the time of this investigation, but had not regularly performed such investigations following the training.

   As part of this investigation, the Investigator (a design engineer who had participated in a recent major modification to the turbine building HVAC system) focused exclusively on the CR HVAC system and all other HVAC systems without broadening the scope of the investigation to include other systems with similar vulnerability, and without realizing the existence of GL 88-14. The Investigator narrowed the scope of the investigation primarily because of the belief that the subject valve and dampers failed precisely as they had been designed to fail on a loss of instrument air. A plant modification had been performed in 1973 to intentionally change the "fail" positions of the subject equipment on a loss of instrument air to prevent short cycling of the CR HVAC system. This was considered a deficiency in application of design principles by the Investigator; thus the review for similar problems focused on the presence of similar design deficiencies in the remainder of the HVAC systems, rather than on unanticipated losses of any safety related equipment following loss of nonsafety-related instrument air.

3. Following recognition that the SCW-46A valve and the SAC-1A/B dampers would fail in such a way that cooling to the control room would be lost on a loss of instrument air, an Event Report (ER) was generated and a screening of the event was commenced. The department manager presenting the ER recommended during the event screening that a 30-day BMO be generated. Subsequent to the event report screening, plant management decided that a Temporary Modification (TM) would be installed to return the CR HVAC system to its intended design configuration. This decision, while it effectively compensated for the degraded condition by enabling the uninterrupted safety function of the CR HVAC, did not fully correct it in that the dampers could no longer be operated from within the control room as stated in FSAR Section 10.12.3.3. Also, although the BMO recommendation was superseded, the ER was not revised to remove it since the screening process in effect at that time had no provisions (as it does now) for re-screening ER changes; therefore, the decision to delete the BMO recommendation from the ER did not benefit from a broader review by the screening committee.

The TM was subjected to a 10CFR50.59(a)(2) safety evaluation, which concluded that "the TM brings the control room HVAC into conformance with its intended function of providing heating and cooling within the requirements of the FSAR." While it is technically correct that the TM assured the continued functionality of the CR HVAC through the use of hardware modifications and operator action, it is not literally true that it did so "within the requirements of the FSAR," since the remote manual switch described in FSAR Section 10.12.3.3 would not be operable during a postulated loss of SA/CR HVAC. The original safety evaluation did not address this condition because of a common understanding on the part of the evaluation preparers, reviewers and approvers that its purpose was to focus on the ultimate safety impact of the change from pneumatic to manual actuation on the functionality of the CR HVAC system, considering that either initiating mechanism would produce the same system response. The fact that the discrepancy between the installed configuration and FSAR Section 10.12.3.3 constituted a degraded condition that the TM failed to remedy was not recognized, and, therefore, the BMO provisions of AP 0009 were not applied.

Corrective Steps That Have Been Taken and the Results Achieved:

Issue No. 1:

A Temporary Modification was performed to address this problem following its discovery in 1996. This action was completed on October 18, 1996.

Issue No. 2:

Since the time of the events that resulted in this violation, VY has assigned a dedicated team to support root cause investigations on a day-to-day basis. This assures that personnel proficient in current practices and procedures are involved in these investigations. This process enhancement went into effect in April of 1997.

Issue No. 3:

A BMO was approved on July 9, 1998 in conjunction with Revision 1 of the safety evaluation originally performed for the TM. This BMO provides a full evaluation of the consequences of changing from pneumatic to manual actuation as defined in NRC Information Notice 97-78.

Corrective Steps That Will Be Taken to Avoid Further Violations:

1. This installed configuration/FSAR discrepancy will be evaluated and a course of action will be pursued that will ensure consistency between the system and the FSAR. The BMO and TM will remain in place until that time. (Expected completion date: August 31, 1999)

2. VY will reevaluate the methodology and work instructions used to verify the actions identified in GL 88-14. (Expected completion date: December 1, 1998)

3. This event will be considered for use as a lessons-learned case study in the Engineering Support Personnel (ESP) training program, to promote more thorough evaluation of generic issues and better ways to assess applicability. This consideration will be made at a future

scheduled ESP Curriculum Committee meeting. (Expected completion date: December 31, 1998)

4. The affected P&ID will be reviewed and a corrective update will be submitted as necessary to include the appropriate level of detail. (Expected completion date: October 15, 1998.)

Date When Full Compliance Will Be Achieved:

Issue No. 1:

Full compliance was achieved on October 18, 1996, when the Temporary Modification was implemented.

Issue No. 2:

Full compliance was achieved in April of 1997, when process enhancements to improve the effectiveness of causal evaluations were implemented.

Issue No. 3:

Full compliance was achieved on July 9, 1998 when the BMO was approved

VIOLATION 3

10 CFR Part 50.73(a)(2)(v)(D) states that licensee shall submit a Licensee Event Report (LER) within 30 days for any condition that alone could have prevented the fulfillment of the safety function of systems that are needed to mitigate the consequences of an accident.

Contrary to the above, on or before June 5, 1998, the licensee failed to submit the required report to the NRC as required above, in that on August 19, 1996, VY found that the loss of the nonsafety-related control air alone would have rendered the control room ventilation system, which is needed to mitigate an accident, degraded and no Licensee Event Report was submitted to the NRC.

This is a Severity Level IV Violation (Supplement I).

RESPONSE:

Basis for Disputing the Violation

Vermont Yankee (VY) does not concur that a violation of 10CFR50.73 requirements exists, for the following reasons, and requests that the staff reconsider this portion of the Notice of Violation.

On August 19, 1996, VY determined that a loss of the Station Air (SA) supply to the CR HVAC system pneumatics would result in the loss of that system's cooling capability.

The event was screened for reportability and was determined to be not reportable based on:

-The time available (2-4 hours) to restore SA/CR HVAC
-The emergency bus power supplies to two of the SA compressors

On June 3, 1998 the condition was again entered into the Vermont Yankee reportability determination process as a result of questions raised during the NRC inspection. The conclusions of that evaluation provide the basis for disputing this violation.

The Notice of Violation states that the condition constituted an "event that alone could have prevented the fulfillment of the safety function of systems. . ." VY asserts that the sustained loss of Station Air System pressure is not a single event. Rather, for a loss of SA to be extended for a period that would challenge control room equipment operation, multiple failures of plant equipment or violations of plant procedures by the operating crew would have to occur.

The design of the VY SA System, combined with the in-place plant operating procedures makes it implausible that the air pressure could be lost for the period necessary to prevent the CR HVAC system from fulfilling its safety function. Analysis has shown that an interruption of CR HVAC cooling will not prevent it from performing its safety function unless that interruption exceeds at least 2 hours in duration.

The VY plant design features and operating procedures affecting the availability of Station Air System pressure includes:

- Four redundant (100% capacity) air compressors.
- Two of the four SA compressors are normally powered from the safety buses.
- The VY 4160Vac distribution includes two redundant emergency diesel generators.
- The plant is equipped with an Appendix R Alternate AC power source which has been demonstrated to be capable of powering an emergency bus within 10 minutes.
- The design of the 4160Vac distribution system would allow the connection of the emergency power supplies to either of the SA compressors.
- The VY SA is designed to withstand a seismic event without a loss of system function.
- Plant procedures require that the operating crew take steps to immediately restore SA upon the loss of system pressure.
- The loss of SA pressure is annunciated in the main control room.
- The heat load in the main control room is such that the restoration of CR HVAC need not distract the operating crew from taking appropriate immediate actions in the event of an accident.
- The temperature at which control room equipment operability would be challenged is sufficiently high to ensure that the operating crew would have ample time to detect the abnormally high temperature and sufficient time to restore the SA system prior to any adverse effect on the control room equipment.
- Proper operation of the SA system is verified on a continuous basis during plant operation (VY FSAR Section 10.14.4).

NUREG 1022, Revision 1, Section 3.3.3 describes an acceptable method for the implementation of the CFR requirement established in the criteria cited in the Notice of Violation [10CFR50.73(a)(2)(v)(D)].

That portion of the NUREG states, in part:

> The level of judgment for reporting an event or condition under this criterion is a reasonable expectation of preventing fulfillment of a safety function. In the discussions which follow, many of which are taken from the Statement of Considerations or from previous NUREG guidance, several different expressions such as "would have," "could have," "alone could have," and "reasonable doubt" are used to characterize this standard. In the staff's view, all of these should be judged on the basis of a reasonable expectation of preventing fulfillment of the safety function.

The NUREG indicates clearly that a level of judgement is to be applied to conclude what is the "reasonable expectation."

NUREG section 3.3.3 also states:

> A system must operate long enough to complete its intended safety function as defined in the safety analysis report. Reasonable operator actions to correct minor problems may be considered; however, heroic actions and unusually perceptive diagnoses, particularly during stressful situations, should not be assumed.

None of the manual actions assessed to determine the reportability of the condition approach what could be considered heroic. The operating crew would be expected to respond to control room alarms as prescribed by plant procedures. None of the manipulations credited in the reportability determination would require equipment operation from outside of the control room.

The reasonable expectation is that: 1) a fully functional SA system would shut down due to the advent of a plant accident, considering the effects of the design basis accident assumptions; 2) from the time loss of SA occurs, at least two (2) hours would be available to restore the SA to service; and 3) by implementing plant procedures, the operating crew would restore SA pressure, thus restoring CR HVAC to operation after a brief interruption.

In the highly unlikely event that these actions are unsuccessful in restoring SA pressure, plant management would be available to assist the operating crew in the decision to align the 4160Vac distribution system to supply the non-vital powered SA compressors from the emergency buses. Again, this is a manipulation that can be performed from the main control room.

The assessment for reportability was consistent with clarification planned for inclusion in 10CFR50.73(a)(2)(v) during the upcoming rulemaking. The NRC provided that clarification via the Federal Register on July 23, 1998 (Volume 63, Number 141). The planned change is expected to elaborate on the wording of the current rule to state that a "condition alone" that could have prevented the fulfillment of the safety function should be assessed in light of any combination of events that existed while the condition was present. It was recognized that the as-found condition of the CR HVAC pneumatics would challenge the system's ability to perform its safety function **only if** a sustained loss of SA were to occur. VY concluded that such a combination of conditions had never existed at VY. The cited clarification would not require that additional conditions be postulated which could lead to a system being rendered incapable of performing its safety function. It would, rather, require only that "existing conditions" be evaluated. In addition to the requirements of the regulation, the VY assessment for reportability went on to consider the possible combination of conditions that could have prevented the CR HVAC system from performing its safety function. VY assessed the possibility of conditions

occurring that might have led to a loss of SA for a period of two hours or more. Those conditions were determined not to be credible.

VY has assessed the postulated conditions against the NUREG guidance to determine if a reasonable expectation exists that a safety function would not be fulfilled. It was concluded that although CR HVAC would be temporarily interrupted by a loss of SA, expectations are that SA would be rapidly restored to service without the need for extraordinary actions on the part of the operating crew. Restart of SA following a pipe rupture or loss of electrical power is an expected operator response that is reinforced by appropriate training and evaluation of performance. These operator actions would support the CR HVAC System in fulfilling its safety function. We believe, therefore, that the condition does not meet the reporting criteria of 10CFR50.73.

Steps That Have Been Taken and The Results Achieved

As the result of questions raised during the April – May 1998 NRC inspection, the event was reevaluated for reportability. That evaluation concluded that the original evaluation had drawn the appropriate conclusion and the condition was not reportable pursuant to 10CFR50.73.

Corrective Steps That Will Be Taken to Avoid Further Violations:

VY believes that no additional corrective actions are necessary at this time.

Date When Full Compliance Will Be Achieved:

Based on the above, Vermont Yankee believes that we were not in violation of the requirements of 10CFR50.73 relative to this event.

VIOLATION 4

10 CFR Part 50 Appendix B, Criterion III, Design Control, states, in part, that measures shall be established for the identification and control of design interfaces. These measures shall include the revision of documents involving design interfaces.

Procedure AP 6007, Rev. 0, dated October 31, 1997, "Procedure for the Control, Update, and Maintenance of Vermont Yankee Design Basis Documents," implements these measures and indicates the purpose of the Design Basis Document (DBD) Program was to capture and organize the current Design, Operational and Licensing Basis of Vermont Yankee. Section 4 of the DBD, describes System Interfaces. Procedure AP 6007 requires that all pending or interim change notices be documented and distributed to all controlled copies of the affected DBDs and copies of the change notices be maintained with each controlled copy of the associated DBD.

Contrary to the above, on or before June 5, 1998, the licensee failed to implement the measures established by AP 6007 to control design interfaces in that (1) the design basis document for the 4160 and 480 Volt AC Systems was issued without any notices prepared to identify the need for changes to the DBD resulting from revisions to the Motor Protection Guidelines and the Breaker Coordination Study, and (2) the Emergency Diesel Generator System DBD was issued without a pending change associated with frequency requirements.

This is a Severity Level IV Violation (Supplement I).

RESPONSE:

Reason For the Violation:

Vermont Yankee does not contest this violation. During the 40500 Inspection, it was determined that a number of changes to approved DBDs had been initiated but had not been identified as pending changes in the controlled DBDs. Many of these changes involved issues that were self-identified during the DBD validation process.

The reason for failing to identify the pending changes in the controlled DBDs was a weakness in the administrative procedure for control and update of Design Basis Documents (AP-6007 Control, Update, and Maintenance of Vermont Yankee Design Basis Documents). The procedure allowed for deferral of a Pending Change Notice if an Interim Change was in process. As a result, Pending Change Notices were not issued against the DBDs when issues were identified. Due to the time required for processing of the interim changes, the DBDs did not adequately reflect outstanding changes.

Corrective Steps That Have Been Taken and the Results Achieved:

1) A review of outstanding changes was conducted to determine what immediate actions were required. The outstanding changes were determined to be editorial changes, clarifications, supplemental information and changes to ensure consistency between DBDs. Based on this, no additional immediate action relative to ongoing engineering work was determined to be necessary.

2) The procedure for control and update of Design Basis Documents (AP6007) was revised on July 31, 1998 to require Pending Change Notices for all identified DBD changes.

3) All department managers were informed on July 31, 1998 of the reasons for the procedure change and requested to instruct affected personnel in the details of the change.

4) All outstanding interim changes were issued by July 31, 1998.

5) The procedure used in performing DBD validations (VYP-024, Procedure for Validation of Vermont Yankee Nuclear Power Station to Design Basis Document Requirements) was revised on June 4, 1998 to include a requirement to issue a Pending Change Notice for any identified error in a DBD.

6) Vermont Yankee has recently implemented organizational changes to provide a separate Configuration Management (CM) Group. This will result in additional management focus within the CM functional area. Vermont Yankee believes this will further improve management oversight in this area.

Corrective Steps That Will Be Taken to Avoid Further Violations:

The corrective actions taken to date will avoid future violations.

Date When Full Compliance Will Be Achieved:

Full compliance was achieved on July 31, 1998 with the completion of the corrective actions outlined above.

VIOLATION 5

10 CFR 50.54(a) states, in part, that "Changes to the quality assurance program description that do reduce the commitments must be submitted to the NRC and receive NRC approval prior to implementation."

The Yankee Operational Quality Assurance Program (YOQAP) was approved by the NRC with an exception regarding use of Regulatory Guide 1.26 for classification of structures, components, and systems. Since 1982, Appendix B of the YOQAP, section VII.A, states "Vermont Yankee shall continue to classify structures, components and systems in accordance with ANS-22, Draft No. 4, Rev. 1, May 1973, 'Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants', as in the past." The Vermont Yankee Safety Classification Manual is used to implement this quality assurance program commitment.

Contrary to the above, in July 1988, Vermont Yankee reduced commitments contained in their NRC-approved QA program (YOQAP), without prior NRC approval, by using ANS-52.1, 1983, 'Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants', which contained a higher threshold for safety classification of SSCs than the draft issue of the ANS-22 standard referenced in the approved QA program. In addition, Vermont Yankee failed to evaluate the effect of using the issued standard on SSCs that had already been classified.

This is a Severity Level IV Violation (Supplement I).

RESPONSE:

Reason for the Violation:

Vermont Yankee does not contest this violation. Our investigation has determined that the initial issue of the Vermont Yankee Safety Classification Manual (VYSCM), Revision 0, dated 12/22/86 (vice the 1988 revision cited in the Notice of Violation), contained criteria for the derivation of safety classification that were not in accordance with the NRC-approved Quality Assurance Program (YOQAP-1-A), in that it allowed the use of standards other than the ANS-22, Draft 4, Revision 1 endorsed in YOQAP-1-A (specifically, ANS 52.1 and Regulatory Guide 1.26, Section 2d). The preparers, reviewers and approvers of the VYSCM failed to identify the discrepancy between the VYSCM and YOQAP-1-A when the former was established in 1986. Consequently, the program documents were not revised at that time to be consistent with one another. Subsequent changes to the VYSCM between 1986 and 1991 received the same level of review and approval as the original, but the discrepancy remained undetected. After 1991, the review authority for the VYSCM was revised to include the Plant Operations Review Committee and

exclude Quality Assurance, further reducing visibility of the discrepancy to the QA Department (QAD), owner of YOQAP-1-A.

In 1987, Yankee Nuclear Services Division (YNSD) Engineering, while addressing a safety classification change for refueling equipment, recognized that YOQAP-1-A should be revised to agree with the position taken in the VYSCM, and reported this discovery to VY via written correspondence. A proposed change to YOQAP-1-A was prepared and forwarded to VY, but QAD was not on distribution for the correspondence and there is no evidence that QAD was ever requested by VY to incorporate the proposed the change.

In 1996, a Quality Assurance surveillance by QAD ultimately identified that the VYSCM was not in full compliance with Appendix B, Section VII of YOQAP-1-A, and an event report was generated. The corrective action process did not ensure that the non-conservative criteria in the VYSCM were promptly removed, and did not establish whether those criteria had been applied to any plant equipment such that its safety classification was not in agreement with the requirements of ANS-22.

Corrective Steps That Have Been Taken and the Results Achieved:

An evaluation of plant systems, structures and components (SSCs) was performed prior to May 28, 1998 to determine whether any SSCs were improperly classified based on standards other than ANS-22. The single SSC that did not comply with ANS-22 (specifically, refueling equipment) was tagged out of service on May 28, 1998 to ensure that the site-boundary dose limits of ANS-22 would not be exceeded.

A change to the VYSCM was made on May 29, 1998 to document the unavailable status of the affected SSC, and to impose the more stringent site-boundary dose limits of ANS-22 (170 mrem vs. the 500 mrem previously allowed under Regulatory Guide 1.26) in the classification criteria for the type of equipment involved.

Administrative controls were applied on May 21, 1998 to preclude use of the VYSCM for the purpose of downgrading the safety classification of plant equipment.

QAD's discovery of the deficiency was a two-year-old event when this violation was assessed. The integrated VY corrective action process, as documented in plant procedure AP 0009, was in its infancy when the aforementioned event report was written, and the thoroughness of causal investigations was still evolving. The procedure has since been revised several times to clarify causal investigation criteria, and these changes have helped to ensure that more recent investigations were properly focused.

Since the time of the 1996 QA surveillance, a new corporate-level management position has been established with responsibility for oversight of the Quality Assurance function.

Corrective Actions That Will Be Taken to Prevent Further Violations:

A new procedure is under development to direct the process of preparing proposed changes to the Quality Assurance Program. (Expected completion date: September 1, 1998.)

A change to the VYSCM is being prepared to prevent further inappropriate use of safety classification standards not endorsed in YOQAP-1-A (now designated as VOQAM Rev. 0). (Expected completion date: September 25, 1998.)

Licensing action is being initiated to propose changes to YOQAP-1-A (VOQAM Rev. 0) to establish updated safety classification criteria for VYNPC that are consistent with current standards and industry practices. (Expected completion date: December 31, 1998.)

Date When Full Compliance Will Be Achieved:

Full compliance was achieved on May 28, 1998, when the SSCs identified as non-complying were administratively removed from service.

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

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Gregory A. Maret
Director of Operations

cc: USNRC Region 1 Administrator
USNRC Resident Inspector – VYNPS
USNRC Project Manager – VYNPS
Director, USNRC Office of Enforcement
Vermont Department of Public Service