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REGION I

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Licensee: Vermont Yankee Nuclear Power Corporation

Facility: Vermont Yankee Nuclear Power Station

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EXECUTIVE SUMMARY

Vermont Yankee Nuclear Power Station NRC Inspection Report No. 50-271/97-10

This inspection included aspects of licensee engineering and technical support operations. As a result of the NRC's Architect/Engineer (A/E) team inspection documented in inspection report 50-271/97-201, dated August 21, 1997, and follow-up by the regional and resident inspectors, multiple apparent escalated enforcement items and three violations were identified.

Engineering

- The licensee failed to maintain control of the design process by failing to assure suitability of equipment to support safety-related functions and failing to verify the inputs of safety-related calculations. (Section E1.1)
- The licensee failed to provide prompt or adequate corrective action for conditions adverse to quality on five occasions. (Section E2.1)
- The licensee failed to provide licensee event reports required by 10 CFR 50.73 when equipment was found outside the design basis. (Section E4.1)
- The RRU 5 & 6 room coolers were reclassified as nonsafety-related without a safety evaluation. (Section E3.1)
- The RHR heat exchanger performance test failed to adequately identify and control the required test instrument acceptance criteria. (Section E2.3)
- The quality assurance records associated with the 1996 main station battery surveillance tests could not be recovered and were presumed lost. (Section E3.2)
- Six design issues and one fire protection issue were treated as non-cited violations in accordance with Sections VII.B.3 and VII.B.4 of the NRC's Enforcement Policy. (Sections E8.3 and F3.1)

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Report Details

III. Engineering

E1 Conduct of Engineering

E1.1 Design Control

a. Inspection Scope (92903)

Inspection report 50-271/97-201 documented multiple examples of design control problems. The inspectors reviewed the following unresolved items to assess the Vermont Yankee (VY) design control process.

b. Observations and Findings

(Closed) Unresolved Item 50-271/97-201-01: Suppression Pool Cooling - The licensee identified that Technical Specification Amendment No. 88, which permitted operation with the suppression pool above 90°F, was not consistent with the FSAR safety analysis. The licensee documented this deficiency in Event Report (ER) 96-0644, dated November 2, 1995. The licensee had also established an administrative limit of 90°F (except during surveillance testing) in response to Basis for Maintaining Operability (BMO) 96-05. The licensee's review of the historical record determined that during two separate periods, one in August 1988 and another in August 1993, the suppression pool temperature had exceeded 90°F. The licensee documented this finding in ER 97-0635, dated May 29, 1997. The NRC architect/engineer (A/E) inspection team documented that the licensee had failed to maintain maximum suppression pool temperature consistently within the value used in the FSAR Chapter 14.6.3 accident analysis. This is an apparent violation of 10 CFR Appendix B, Criterion III, Design Control in that the licensee failed to control the design interfaces (completely determine all the effects of operating with the suppression pool temperature above 90°F). (EEI 50-271/97-10-01a)

(Closed) IFI 50-271/97-201-04: RHR Pump NPSH Calculated Margin - The A/E team identified that the licensee had used non-conservative curve fit data instead of actual vendor data to demonstrate net positive suction head (NPSH) margin for RHR pumps. In response to the A/E finding, the licensee issued ER 97-0664, dated May 29, 1997, and memorandum VYS-60/97, dated June 6, 1997, which justified operability based on conservatism in other supporting calculations. This is an apparent violation of 10 CFR 50, Appendix B, Criterion III, in that the licensee failed to correctly establish the suitability of application of the RHR pump NPSH under all design conditions. (EEI 50-271/97-10-01b)

(Closed) LER 50-271/97-12; NCV 50-271/97-10-02 and Unresolved Item

50-271/97-201-05: RHR/LPCI Flow Rates - The licensee identified that calculation VYC-0937, Rev. 1, had failed to verify the low pressure coolant injection (LPCI) flow inputs to the loss of coolant accident (LOCA) analysis VYC-937, were correctly interpreted in Tech Spec 4.5.A.1.c. The licensee issued ER 97-0502, dated May 6, 1997, to document this deficiency and immediately evaluated the effect on peak clad temperature to be less than 50°F. 10 CFR 50.46 (a)(3)(I) defines a significant change or error is a difference in peak fuel cladding temperature of more than 58°F.

The failure to verify the LPCI flow inputs to the LOCA analysis is a violation of 10 CFR Appendix B, Criterion III, Design Control. This violation was identified by the licensee and corrective actions were prompt and comprehensive. As a result, this violation of NRC requirements will not be cited in accordance with Section VII.B.1 of the NRC Enforcement Policy. **(NCV 50-271/97-10-02)**

(Closed) Unresolved Item 50-271/97-201-06: RHR Pump Minimum Flow Protection

- The A/E team identified that the licensee had failed to rectify the discrepancy between the RHR pump minimum flow and the pump vendor's documented minimum flow protection requirements. At VY, the minimum flow lines of both RHR pumps have orifices restricting flow to 350 gpm. The pump manufacturer recommended a continuous minimum flow of 2700 gpm with a one time only allowance of 350 gpm for 30 minutes based on a pump in good condition. This is an apparent violation of 10 CFR 50, Appendix B, Criterion III, in that the licensee failed to establish the suitability of application of the RHR pump minimum flow protection, that is essential to the safety-related function of the RHR system, by not rectifying the discrepancy between the manufacturer's recommendation and the as-installed design. **(EEI 50-271/97-10-01c)**

(Closed) Unresolved Item 50-271/97-201-08: RHR Pump Motor Starting Limitations

- The RHR motor starting limits were provided based on a motor design ambient temperature of 86°F. The A/E team identified that the licensee had failed to correctly translate the RHR corner room accident design temperature and RHR pump motor manufacturer's starting limits into operating procedure OP 2124, RHR System, Rev. 42, dated April 24, 1997. The licensee initiated ER 97-0714, dated June 10, 1997, to address this concern because the RHR pump motors may be required to start in ambient temperatures as high as 148°F. Failure to correctly translate the expected motor ambient temperature and the manufacturer's recommendations into operating instructions is an apparent violation of 10 CFR 50, Appendix B, Criterion III. **(EEI 50-271/97-10-01d)**

(Closed) Unresolved Item 50-271/97-201-13: Room Cooler Thermal Performance - The licensee had based its acceptance criteria for room cooler thermal performance on fouling caused by silting. The A/E team identified that the licensee had failed to revise the fouling assumptions used in calculation VYC-1329 as a result of its inspection of the safety-related unit coolers RRU 7 and 8 in April 1995. That inspection confirmed that the increase in pressure drop across the cooler coils was not due to silting, but possibly micro-fouling. Use of an incorrect assumption for the fouling mechanisms in the room cooler thermal performance calculations is an apparent violation of 10 CFR Appendix B, Criterion III, in that the licensee failed to establish the suitability of application of the room cooler thermal model. **(EEI 50-271/97-10-01e)**

(Closed) Unresolved Item 50-271/97-201-18: Equipment Classifications - The A/E team identified that the licensee had failed to assure the capability of the nonsafety-related control air equipment to support the operation of the safety-related diesel generators. The A/E team report incorrectly implied that the pressure regulators controlled cooling of both diesels. The inspectors confirmed that each diesel has its own pressure regulator. The licensee issued ER 97-0512, dated May 9, 1997, to address this issue and replaced the questionable components on both emergency diesel units with dedicated safety-related components. This is an apparent violation of 10 CFR 50, Appendix B, Criterion III, in that the licensee failed to establish the suitability of nonsafety-related components in a subsystem essential to the safety-related function of the emergency diesel generators. **(EEI 50-271/97-10-01f)**

(Closed) IFI 50-271/97-201-25: Cable Separation - The A/E team identified that the licensee failed to document all exceptions to meeting the required cable separation criteria. The licensee issued ER 97-0663, dated June 2, 1997, for the generic concern of documenting exceptions to cable separation criteria, and ER 97-0662, dated June 4, 1997, for the specific identified concern of lack of separation for cables routed through manholes for the Vernon tie. The licensee's immediate evaluation indicated no short term corrective action was required but indicated the separation design basis document, VYS-027, needed to be updated to document the observed exceptions. Cable separation will be followed under unresolved item 50-271/97-03-02 pending further NRC review of the licensee's cable separation assessment.

(Update) IFI 50-271/97-201-26: Instrument Calculations - The A/E team identified that the licensee had failed to revise instrument uncertainty calculations to include instrument drift factors. The inspectors confirmed that the licensee had previously started an instrument setpoint program. This item will remain open pending NRC review of the licensee's incorporation of the drift design guide into the setpoint design guide.

(Closed) IFI 50-271/97-201-27: RHR Flow Instrument Loop Uncertainty - The A/E team identified that the licensee had failed to include instrument uncertainty in the determination of RHR/LPCI flow test acceptance criteria. In response to this concern, the licensee issued ER 97-0694, dated June 6, 1997. Although the licensee found no operability concern, it did acknowledge that the large uncertainties associated with the RHR flow required resolution. This is an apparent violation of 10 CFR 50, Appendix B, Criterion III, in that the licensee failed to include instrument uncertainty into the RHR/LPCI flow specifications and instructions. (EEI 50-271/97-10-01g)

(Closed) IFI 50-271/97-201-29: Calculation Control - The A/E team identified that the licensee had failed to use the latest documents for calculation inputs, in accordance with engineering instruction WE-103, Engineering Calculations and Analyses. The inspectors observed that even though the licensee had embarked on a configuration management program, including design basis documentation and verification, two of the examples noted in the A/E report involved recent calculations (VYC-298, Rev. 10, dated April 22, 1997 and VYC-1349, Rev. 1, dated April 30, 1997). This is an apparent violation of 10 CFR 50, Appendix B, Criterion III, in that the licensee failed to assure correct references and inputs were used in design calculations. (EEI 50-271/97-10-01h)

c. Conclusions

The inspectors concluded that the licensee had failed to maintain control of the design process as required by 10 CFR 50, Appendix B, and Yankee Operational Quality Assurance Plan 1A (YOQAP-1A), Criterion III, Design Control, by failing to consider all relevant effects of the design on maintaining the plant design basis.

E1.2 Design Basis Documentation

a. Inspection Scope (92903)

The cover letter to inspection report 50-271/97-201, dated August 27, 1997, included a statement where the A/E team concluded that it was unlikely that the licensee would have uncovered some of the issues identified in that report. The licensee had indicated at the A/E inspection exit that they would re-examine its design basis verification program. The inspectors reviewed the design basis document (DBD) verification results during this inspection to assess the licensee's approach to DBD verification.

b. Observations and Findings

The inspectors met with members of the licensee's Configuration Management Improvement Project (CMIP) to review the results of the initial validation effort. The licensee indicated two DBDs (125 VDC system and 480/4160 VAC system) were validated using safety system functional inspection (SSFI) techniques. This effort started on August 11, 1997, and an internal exit was held on September 30, 1997, which identified errors and inconsistencies in the referenced documents, along

with calculation control problems and discrepancies in procedures. The licensee stated that 41 event records were generated, with two potentially significant items affecting the dc system. The licensee concluded that it would continue to look at 100% of the requirements documented in the DBDs during the validation process, until a higher confidence level was obtained.

c. Conclusions

The inspectors concluded that the licensee had strengthened its validation process as a result of the lessons learned from the A/E inspection. The inspectors concluded the licensee had adjusted the depth and breath of its validation inspection using the SSFI techniques similar to those used in the A/E team inspection and concluded that its validation efforts should produce results similar to the A/E team review.

E2 Engineering Support of Facilities and Equipment

E2.1 Corrective Actions

a. Inspection Scope (92903)

Inspection report 50-271/97-201 documented examples of untimely or inadequate corrective actions. The inspectors reviewed the following unresolved items to assess the licensee's corrective action process.

b. Observations and Findings

(Closed) Unresolved Item 50-271/97-201-02: Suppression Pool Elevated Temperature - The A/E team identified that the licensee had failed to evaluate, in a timely manner, operability of the emergency core cooling system (ECCS) pumps when taking suction from the suppression pool at elevated temperatures. Elevated temperatures of the suppression pool affects the available net positive suction head for the ECCS pumps. This concern was first identified by the licensee in 1994 as Engineering Deficiency Report 94-05 at Yankee Atomic, and later entered into the licensee's problem reporting system as ER 95-0644, dated November 11, 1995. This is an apparent violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, in that the licensee failed to promptly identify and correct a non-conformance concerning elevated suction temperature on ECCS operability.
(EEI 50-271/97-10-03a)

(Closed) URI 50-271/97-201-10: RHR System Operation in Suppression Pool Cooling Mode - The licensee had identified, during a revision to a calculation, a single failure vulnerability while operating in the suppression pool cooling mode. Under these conditions, one train of the RHR system would be operating outside its design basis lineup for low pressure coolant injection (LPCI). The inspectors confirmed that the licensee had established appropriate corrective action in the form of administrative controls, following the discovery of the potential single failure vulnerability. Those controls result in the RHR system being entered into the LCO log whenever it is operated in the suppression pool cooling mode. The inspectors found no examples where, had an LCO been entered, that the allowed outage time would have been exceeded. Therefore, based on the scope of the inspectors' review, no LCO violation was identified.

(Closed) Unresolved Item 50-271/97-201-11: RHR Operability Determination - To operate the RHR system in the suppression pool cooling mode, the licensee takes one sub-system out of its design basis line-up, leaving the RHR system vulnerable to a single failure. Technical Specification (TS) 3.5.A requires the RHR/LPCI systems be declared inoperable if either subsystem is not available to perform its safety function. This was previously identified in NRC inspection report 50-271/93-80 as a weakness in the administrative control process. The licensee had planned to address this concern as part of its Improved Technical Specification (ITS) program. When the ITS program was delayed, the licensee failed to take appropriate action to address the operation of the RHR system outside its design basis. The inspectors confirmed the licensee had failed to enter a limiting condition for operation (LCO) for this condition on April 17, 1997, but when the "A" LPCI subsystem was operated on September 26, 1997, it had been entered on the inoperable list. The licensee has administratively addressed this concern since the A/E team inspection. The failure to take prompt corrective action to enter LCOs when performing testing is an apparent violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action. (EEI 50-271/97-10-03b)

(Closed) Unresolved Item 50-271/97-201-19: Service Water (SW) Pump Operability - The A/E team identified that the licensee had failed to revise nonconservative technical specification 3.5.D.3 for SW pump operability in a timely manner after it discovered the condition on February 24, 1997 (ER 97-0198). As an immediate compensatory action, the licensee revised procedure OP-2181, Service Water/Alternate Cooling Water Operating Procedure, to add the appropriate action statement via department instruction (DI) 97-28. The failure to take prompt corrective action to revise a nonconservative technical specification is an apparent violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action. (EEI 50-271/97-10-03c)

(Closed) Unresolved Item 50-271/97-201-20: Use of Probabilistic Risk Assessment (PRA) Methods to Address Tornado Missile Hazards - Inspector follow-up identified that ER 97-0584 was closed on June 19, 1997, with an open internal VY commitment item (No. ER 97-0584-01) to "determine if crimping of diesel generator exhaust pipe is a credible failure." The ER included internal memoranda dated May 7, 1997, and May 20, 1997, addressing the A/E team's question on tornado

missiles. The inspectors examined closed ER 97-0584 package and identified that the EDGs were determined to be operable and that the identified conditions were not deemed reportable. However, the inspectors also determined that the Basis for Maintaining Operation (BMO) process had not been initiated.

Inspectors' review of the May 20, 1997, memorandum identified that the VY staff was unsure of the application of PRA criteria for this issue based on their statement that, "...use of a probabilistic approach for design basis tornado considerations is currently open to question..." The May 20, 1997, memorandum also stated that "...it is possible we [VY] will need to separately submit an amendment for NRC review and acceptance..." referring to the VY's not yet submitted Individual Plant External Event Evaluation (IPEEE). Further, the May 20, 1997, memorandum stated there was an "apparent lack of specificity in the FSAR" with respect to the specific missile protection to be afforded the EDG support systems in question.

Based upon these documented VY staff conclusions, the inspectors determined that the VY staff should have invoked their BMO process as soon as the performance of the EDG system was called into question to resolve these outstanding questions and apparent lack of design specificity. The inspectors also found the application of PRA methods to support the EDG operability determination to be in conflict with the Generic Letter No. 91-18 guidance, section 6.9. Consequently, the licensee failure to take appropriate measures to assure conditions adverse to quality (the EDG support systems tornado missile design vulnerability) were corrected, is an apparent violation of 10 CFR 50, Appendix B, and YOQAP-1A, Criterion XVI, "Corrective Actions." (EEI 50-271/97-10-03d)

(Closed) Inspector Follow-up Item 50-271/97-201-23: Standby Battery Charger -
The A/E team identified that the licensee had failed to correct unconservative technical specification 3.10, regarding the licensee identified potential single failure vulnerability of the dc system when operating with the standby battery charger for an indefinite period of time. The inspectors confirmed that the licensee had originally identified this deficiency as open OI-DC-18 in the 125V DC System Design Basis Document and had issued ER-0177 on February 21, 1997, to address the technical concern. The inspectors also confirmed that the licensee had issued department instruction DI 97-76 on May 5, 1997, revising operating procedure OP-2146, Operation of 125 Volt Battery Chargers to enter the LCO when operating with the spare battery charger as a compensatory measure. However, the licensee's failure to identify the nonconservative technical specification and take prompt corrective action is an apparent violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action. (EEI 50-271/97-10-3e)

c. Conclusions

The inspectors concluded that the licensee had failed to maintain an adequate corrective action program as required by 10 CFR 50, Appendix B and YOQAP-1A, Criterion XVI, Corrective Action, in that the licensee failed to (1) take prompt corrective action to evaluate operation of the ECCS pumps taking suction from the suppression pool at elevated temperature, (2) take prompt corrective action to submit TS amendment requests for nonconservative TS, and (3) evaluate the potential degraded performance of the EDG system following a tornado using their BMO process.

E2.2 (Update) Unresolved Item 50-271/97-201-12: Room Cooler Test Measurement Inaccuracies

a. Inspection Scope (92903)

Inspection report 50-271/97-201 documented an example of potentially inadequate test control. The inspectors reviewed unresolved item 50-271/97-201-12 to assess the licensee's test control as it applied to room cooler RRU 7 thermal performance testing.

b. Observations and Findings

The A/E team questioned if the licensee provided adequate instructions and set appropriate acceptance criteria for instrument accuracy when testing safety-related unit cooler RRU 7 thermal performance. The inspectors found that calculation VYC-1329, dated November 7, 1994, which established the performance limits, had assumed adequate uncertainties for the differential pressure instrument used in the thermal performance tests. The A/E team's review of the test results questioned the large discrepancies between the predicted pressure drop and that actually measured. The licensee could not determine if the discrepancies were due to modeling errors or testing. However, the licensee had questioned the differential pressure method as the best method of determining the RRU room cooler thermal performance prior to the A/E inspection. The licensee indicated that it was developing a better performance test based on heat removal from the air stream and will update the calculations accordingly. This item remains open pending the NRC review of the licensee's revised thermal testing process and results and an NRC determination regarding enforcement.

c. Conclusions

The inspectors concluded that, although adequate instrument accuracy had been used in the RRU 7 thermal performance testing, the differential pressure test method could not produce reliable results consistent with the analytical model.

E2.3 (Closed) Unresolved Item 50-271/97-201-16: Measuring and Test Equipment/RHR Heat Exchange Thermal Performance Test

a. Inspection Scope (92903)

The inspectors reviewed the licensee's measuring and test equipment (M&TE) control as it applied to the RHR heat exchanger thermal performance testing to assess the adequacy of the equipment selected.

b. Observations and Findings

Inspection report 50-271/97-201 documented an example of inadequate control of test instruments involving failure to establish measures to assure that instruments required for the RHR heat exchanger performance testing, including the Emergency Response Facility Information System, were adequate for the application. The licensee initiated Event Notification No. 32285, dated May 6, 1997, in accordance with 10 CFR 50.72 and multiple ERs in response to this concern. The licensee determined that improvements were required in flow instrumentation and possibly temperature instrument accuracy to enhance the thermal performance testing of the RHR heat exchangers. The licensee confirmed that the flow instruments were calibrated at the wrong flow condition and the small changes in temperature across the heat exchanger led to large uncertainties. This is a violation of 10 CFR 50, Appendix B, Criterion XI, Test Control, in that instruments used in activities affecting quality were not properly selected or controlled to maintain accuracy within necessary limits to assure that the test requirements were satisfied. (VIO 50-271/97-10-06)

c. Conclusions

The inspectors concluded that the licensee had failed to provide assurance that the test instruments were adequate for their intended function, as required by 10 CFR 50, Appendix B, Criterion XI, Test Control.

E3 Engineering Procedures and Documentation

E3.1 Safety Evaluations

a. Inspection Scope (92903)

Inspection report 50-271/97-201 documented examples of the licensee's failure to provide adequate safety evaluations. The inspectors reviewed the following unresolved items to assess the licensee's safety evaluation process.

b. Observations and Findings

(Update) URI 50-271/97-201-07: RHR Pump Minimum Flow Protection - The licensee had identified that operator intervention was required to provide RHR pump protection to overcome a design discrepancy between the pump manufacturer's recommended minimum flow of 2700 gpm and the minimum flow of 350 gpm that could be experienced on pump starting against a high system back-pressure. FSAR section 6.5 did not address operator intervention to assure pump minimum flow protection. The RHR system is required to assure the design safety limits of FSAR Chapter 14 are not exceeded. The inspectors confirmed that the pump vendor would permit a one-time-only pump operation at 350 gpm for 30 minutes based on a pump previously in good condition. As stated in Vermont Yankee's reply to the A&E team report, dated October 27, 1997, VY revised BMO 97-29 to eliminate any reliance on operator action. Since the A&E inspection, NRC has issued Information Notice 97-78, "Crediting of Operator Actions in Place of Automatic Actions and Modifications of Operator Actions, Including Response Times," on October 24, 1997. Therefore, this item remains open pending the NRC's review of the licensee's revised BMO process that properly credits operator actions. NRC review will also examine whether, prior to elimination of the operator actions, an unreviewed safety question existed.

(Closed) URI 50-271/97-201-14: Equipment Safety Classification - In response to an engineering review of the room coolers in the ECCS corner rooms during a service water self-assessment, the licensee concluded that those units did not have a safety-related cooling function. However, the licensee failed to perform a safety evaluation prior to reclassifying the safety-related unit coolers RRU 5 and 6 to nonsafety-related on December 30, 1994. FSAR section 10.7.6 (Safety Evaluation) states that the RHR service water pump spaces were provided with space coolers (RRUs 5, 6, 7, and 8) to prevent overheating of the motors during long periods of operation. This is a safety-related function. This failure to perform a formal safety evaluation of the consequences of downgrading the classification of safety-related equipment is a violation of 10 CFR 50.59. The licensee subsequently performed a safety evaluation (SE 97-019) on July 2, 1997, which indicated no unreviewed safety question existed. (VIO 50-271/97-10-07)

c. Conclusions

The inspectors concluded that the licensee had failed to adequately evaluate changes to the safety classification of safety-related ECCS corner room cooling room units RRU 5 and RRU 6, which were described in the FSAR, as required by 10 CFR 50.59.

E3.2 (Closed) URI 50-271/97-201-22: Loss of Surveillance Records

a. Inspection Scope (92903)

Inspection report 50-271/97-201 documented an example of inadequate control of quality records. The inspectors reviewed unresolved item 97-201-22 to assess the licensee's quality record keeping process with respect to the required battery surveillance tests.

b. Observations and Findings

Technical Specification 4.10.A.2.C requires a service discharge test of the main station batteries once per operating cycle. A previous inspection report, 50-271/96-09, had identified a weakness in the battery surveillance test procedure which had permitted the licensee to use the same computer disc for succeeding automatic test data recording. This caused loss of previous data when the disc had been written over. That same inspection report noted the previous automatic computer printout of the test results at 15 minute intervals missed the critical one minute peaks and required the licensee to manually instruct the battery test computer to reprint the test record at the critical times to verify the operability of the main station battery.

The inspectors confirmed that the licensee had lost the individual cell voltage (ICV) and battery terminal voltage test records prescribed by battery test procedure OP-4215 for the main station battery test performed on September 14, 1996, as noted by the A/E team. The inspectors also confirmed that the special test printout, prepared during inspection 50-271/96-09, to prove battery operability, had also been lost. The failure to maintain required surveillance records is a violation of 10 CFR 50, Appendix B, Criterion XVII, in that sufficient records of activities affecting quality, such as the battery test records, had not been maintained. (VIO 50-271/97-10-08)

c. Conclusions

The inspectors concluded that the licensee had failed to maintain adequate control of the main station battery surveillance test quality records as required by 10 CFR 50, Appendix B, Criterion XVII, Control of Quality Records.

E4 **Engineering Staff Knowledge and Performance**

E4.1 Reportability Evaluations

a. Inspection Scope (92903)

Inspection report 50-271/97-201 documented examples of the licensee's failure to issue a license event report (LER). The inspectors reviewed the following unresolved items to assess the licensee's reportability processes.

b. Observations and Findings

(Closed) URI 50-271/97-201-03: Suppression Pool Temperature Outside the Design Basis - The licensee had issued an event notification (EN 30175) on March 26, 1996, as required by 10 CFR 50.72(b)(1)(ii)(B), indicating that operation at suppression pool maximum operating temperature may have placed the unit outside the design basis. Amendment No. 88 to the Vermont Yankee Technical Specifications changed the maximum permitted suppression pool temperature to 100°F. The EN identified that the analysis that supported the technical specification change did not include the feedwater flow in the worst-case analysis. The inspectors confirmed that the licensee failed to follow-up the call to the NRC operations center with a submittal of a written licensee event report, as required by 10 CFR 50.73(a)(2)(vii) because this event (nonconservative analysis) could render both trains of a system required to remove residual heat (emergency core cooling system (ECCS) inoperable). This is an apparent violation of 10 CFR 50.73. (EEI 50-271/97-10-09a)

(Closed) IFI 50-271/97-201-27: RHR Flow Instrument Uncertainty - Procedure OP-2124, Rev. 42, RHR System Operation, dated April 24, 1997, and procedure OP-4124, Rev. 46, RHR System Surveillance, dated April 24, 1997, both provide guidance for minimum pump flow requirements. When the A/E team discovered that the instruments required to establish RHR minimum flow did not include an allowance for the large instrument uncertainty in the minimum flow range, the licensee performed a reportability review but failed to recognize that the procedural inadequacy was reportable. The inspectors confirmed that the licensee failed to adequately evaluate the reportability requirements. This is an apparent violation of 10 CFR 50.73(a)(2)(v), in that an event or condition (procedural errors) could have prevented the fulfillment of a safety function of a system required to remove residual heat. (EEI 50-271/97-10-09b)

c. Conclusions

The inspectors concluded that the licensee had failed to report the above conditions or activities outside the design basis as required by 10 CFR 50.73.

E8 Miscellaneous Engineering Issues

E8.1 Licensing Commitments

a. Inspection Scope (92903)

The NRC issued Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment, on July 18, 1989. The licensee responded to the generic letter with their letter, BVY 90-007, dated January 22, 1990. In that response, VY provided details of their testing for the affected heat exchanges. Inspection report 50-271/97-201 documented two examples of GL 89-13 program commitments that had been revised without notifying the NRC. The inspectors reviewed the following unresolved items identified in IR 97-201 associated with Generic Letter (GL) 89-13 to assess the licensee's control of licensing commitments.

b. Observations and Findings

(Closed) URI 50-271/97-201-15: Removal of Room Coolers RRU 5 and 6 from the GL 89-13 Program - The inspectors confirmed that the licensee had removed the RRU 5 and 6 corner room coolers from the GL 89-13 program following their reclassification of these units as nonsafety-related. The inspectors confirmed that the licensee had written justification (memorandum OPVY 772-94, dated December 30, 1994) for declassifying the RRU 5 and 6 room coolers. The licensee acknowledged that it had not informed the NRC of the change to its response to GL 89-13 contained in its letter to the NRC, letter number BVY 90-007, dated January 22, 1990.

(Closed) URI 50-271/97-201-17: RHR Heat Exchanger Thermal Performance - The inspectors found that the licensee had changed the testing frequency of the RHR heat exchangers to one per refueling outage due to the lack of time, during plant cooldown, to adequately test both units. The licensee indicated that the reactor coolant system cooldown rate did not permit the testing of both RHR heat exchangers each refueling outage. The licensee also indicated that both heat exchangers are cleaned each outage so their thermal performance should be consistent. The licensee acknowledged that it had not informed the NRC of the change to its response to GL 89-13 contained in its letter to the NRC, letter number BVY 90-007, dated January 22, 1990.

c. Conclusions

The inspectors concluded that the licensee had departed from commitments it had made to the NRC as part of its response to GL 89-13. The licensee acknowledged those departures and provided adequate technical justification for the changes. The licensee had initiated a licensing commitment tracking system to ensure the NRC is made aware of similar changes in commitments in the future. Because no regulatory requirements were violated, URI's 97-201-15 and 17 were closed.

E8.2 Station Blackout and Alternate Power Supply

a. Inspection Scope (92903)

Inspection report 50-271/97-201 documented questions on the application of General Design Criterion (GDC) 17, Electric Power Systems, and 10 CFR 50.63, Loss of All Alternating Current Power (Station Blackout). The inspectors reviewed two unresolved items from IR 97-201 related to the offsite power systems to assess the licensee's design of the preferred and alternate ac power supplies.

b. Observations and Findings

(Closed) NCV 50-271/97-10-10 and IFI 50-271/97-201-21: Vernon Tie Minimum Voltage - The licensee had identified a concern that sufficient voltage may not be available at the RHR pump motor to successfully accelerate the RHR pump under

minimum voltage conditions from the Vernon Tie. Motor torque is affected by the applied voltage. The licensee has since determined that the RHR pump motor had sufficient torque at less than rated minimum voltage by a comparison of the pump and motor speed-torque curves. This comparison demonstrated that the reduced motor torque still enveloped the required pump torque. The inspectors confirmed the operator rounds require the operator to confirm the Vernon Tie voltage is above 3900 volts, sufficient voltage to start the RHR pump motor.

The failure to demonstrate adequate voltage from the alternate power supply is a violation of 10 CFR 50.63(c)(2), in that no assurance existed that the alternate ac source had the capability to start the required shutdown loads. This violation was identified by the licensee and corrective actions were prompt and comprehensive. As a result, this violation of NRC requirements will not be cited in accordance with Section VII.B.1 of the NRC Enforcement Policy. (NCV 50-217/97-10-10)

(Closed) IFI 50-271/97-201-24: Delayed Access Preferred Power Supply - As a result of a licensee review of industry concerns on the access time for a delayed offsite power supply, the licensee recognized that there was no analysis to support backfeed through the VY main transformer. The licensee had identified this concern to the NRC prior to the end of the A/E team inspection (BVY 97-67, dated May 29, 1997). The inspectors confirmed the licensee had initiated engineering to install a generator disconnect switch to reduce the time required to backfeed the plant through the main transformer. This item is unresolved pending NRC disposition of the enforcement issues. (URI 50-217/97-10-14)

c. Conclusions

The inspectors concluded that the licensee had adequately controlled the voltage on the Vernon Tie. The inspectors concluded that the proposed generator disconnect switch should satisfy the delayed access time requirement for the alternate preferred power supply. This will remain an open item pending NRC review of the generator disconnect modification.

E8.3 Licensee Identified Design Issues Review

a. Inspection Scope (92903, 92700)

The inspectors reviewed seven licensee-identified design issues to assess the adequacy of the VY staff's actions with respect to identification, reporting, evaluation, and resolution of each individual issue. This onsite review included the examination of the associated Event Reports (ERs), immediate operability determinations, Bases for Maintaining Operation (BMOs), related safety evaluations, selected corrective action implementation tracking, and the Licensee Event Reports (LERs). The inspectors verified proper implementation of immediate corrective actions, verified and discussed the adequacy of interim compensatory measures with responsible engineering and operations staff, and assessed the overall adequacy and timeliness of proposed actions to ensure the proper resolution and/or a comprehensive programmatic review of the design issues.

b. Observations and Findings

The following design issues (identified by LER number) were examined:

(Closed) LER 96-12, dated May 16, 1996, IFI 97-02-02 and NCV 97-10-11a. This issue involved low pressure coolant injection flow potentially diverted due to inadequate design review. This issue was previously discussed in Section O1.3 of inspection report 97-02 and assigned IFI 97-02-02 for inspector follow-up. The licensee's immediate corrective action was to revise the RHR system operating procedures to preclude operations with the alternate keep-fill system in service. This would prevent the possible diversion of the low pressure coolant injection. In addition, a temporary modification was prepared that would have the condensate transfer system connect to the keep-fill system through the normal keep-fill lines which have safety class check valves. This modification would prevent the backflow and diversion of low pressure coolant injection. The inspector found the licensee's corrective actions acceptable.

(Closed) LER 96-30, dated January 13, 1997 and Supplement 1, dated July 7, 1997, and NCV 97-10-11b. This issue involved the transversing in-core probe purge solenoid valve not having been tested in accordance with Appendix J due to an improperly implemented design change. The design change, implemented in 1987, erroneously included a newly installed check valve inside containment as a containment isolation valve. However, this new valve was not fully qualified for use as a containment isolation valve. The licensee determined that the root cause was incorrect use of a non-safety class design procedure that was used to install the 1987 modification. While not listed in the corrective actions taken, the licensee had previously terminated use of this process at the station. The qualified, as-built containment isolation valves, both outside containment, were available for operation as needed; however, one of these valves was removed from the isolation valve testing requirements at the station. Among the immediate corrective actions, the licensee verified that the valve removed from the testing requirements would still receive an automatic isolation signal. The licensee also revised the testing requirements to once again include the as-designed containment isolation valve in the testing program, which was subsequently demonstrated satisfactorily. This action restored the containment configuration to its as-designed and previously qualified condition. The inspector found the licensee's corrective actions acceptable.

(Closed) LER 97-02, dated March 2, 1997, Supplement 1, dated May 29, 1997, IFI 97-03-03, and NCV 97-10-11c. This design issue involved maximum postulated flood conditions which potentially could result in safety-related switchgear being jeopardized. This issue was previously discussed in Section E7.1 of inspection report 97-03 and assigned IFI 97-03-03 for inspector follow-up. The licensee initiated actions for the operators to implement to prevent or minimize the effects of flooding in the plant from the maximum postulated flood condition. Further, in June 1997, the licensee installed conduit seals to aid the operators by reducing the intrusion of water into the switchgear rooms to an easily manageable level. The inspector found the licensee's corrective actions acceptable.

(Closed) LER 97-03, dated April 4, 1997, IFIs 97-02-03 and 97-03-04 and NCV 97-10-11d. This design issue involves the determination that the turbine building lacks over-pressure protection blowout panels which could result in exceeding the assumed differential pressure conditions that adjacent safety-related concrete walls were designed to withstand in the event of a high energy line break. This issue was previously discussed in Section O1.4 of inspection report 97-02 and Section E7.3 of inspection report 97-03, and assigned inspector follow-up items IFI 97-02-03, and IFI 97-03-04, respectively. The licensee provided some immediate administrative controls to ensure that certain doors are closed that prevent passage of steam into the affected areas. Long term corrective actions included: revisions to various operating procedures for the HVAC system, and a modification to prevent steam intrusion into the vital switchgear room HVAC system. That were implemented in April 1997. The inspector found the licensee's corrective actions acceptable.

(Closed) LER 97-04, dated April 4, 1997 and Supplement 1, dated June 19, 1997, IFIs 97-03-05, 97-03-06 and 97-04-05, and NCV 97-10-11e. This design issue involves fire suppression piping vulnerable to failure which could potentially result in safety related switchgear room flooding and the potential loss of associated safety system functions. The fire suppression piping issues were previously discussed in Section E7.4 of inspection report 97-03 and Section E7.2 of inspection report 97-04, and assigned inspector follow-up items IFI 97-03-05, IFI 97-03-06, and IFI 97-04-05, respectively. For each of the identified deficiencies involving internal flood protection vulnerabilities, the licensee developed actions or guidance for the operators to mitigate the consequences of the resultant equipment problems from the internal flooding events, or to protect the equipment itself from the consequences of the flooding. The inspector found the licensee's corrective actions acceptable.

(Closed) LER 97-05, dated April 24, 1997 and Supplement 1, dated September 5, 1997, IFI 97-03-01 and NCV 97-10-11f. This design issue involves the potential for standby gas treatment system over pressurization and subsequent loss of secondary containment integrity during containment inerting/deinerting operations, at power, with a concurrent loss of coolant accident. This issue was previously discussed in Section O1.1 of inspection report 97-03 and assigned IFI 97-03-01 for inspector follow-up. The licensee implemented administrative controls to prevent opening the torus and drywell 18-inch inerting/deinerting lines during power operations. The inspector found the licensee's corrective actions acceptable.

(Closed) LER 97-01, dated February 27, 1997, IFI 97-02-01 and NCV 97-10-11g. This design issue involved a single failure vulnerability in the primary containment isolation system logic, which, if it occurred during a postulated loss of coolant accident, coincident with containment inerting/deinerting operations, could result in the loss of a safety function (steam quenching to the torus bypassed) and over-pressurization of the containment. This issue was previously discussed in Section O1.2 of inspection report 97-02 and assigned IFI 97-02-01 for inspector follow-up. The licensee's immediate corrective actions were to change the containment inerting and deinerting procedures, as well as other affected plant procedures to preclude the simultaneous opening at power of both inboard containment isolation

valves associated with this event. The inspector reviewed the licensee's internal event report corrective action tracking sheet and verified that the licensee's procedure changes had been effected as described in the report. This action prevents the sequence of events that could lead to containment suppression pool bypass even if the associated equipment in the primary containment isolation system logic were to fail as described in the report.

The inspectors found that the above licensee identified "old design issues" (reference Enforcement Guidance Memorandum 96-005, dated October 21, 1996) were appropriately dispositioned within the guidance of Generic Letter 91-18 and that appropriate 10 CFR 50, Appendix B, corrective action plans were developed for each issue in accordance with the licensee's administrative control processes (ERs and BMOs). The inspectors observed that the licensee's reporting of these issues met 10 CFR 50.72 and 50.73 requirements for timeliness, scope and content. The LERs typically did not provide extensive consequence assessment. However, the information provided still met the requirements of 10 CFR 50.73 and was of sufficient detail to understand the nature of the event. For example, LER 97-001 stated that the event consequences could be overpressurization of the containment, but did not state whether containment failure would result. Each of the above issues was identified via the VY staff's efforts to consolidate the facility's design basis documentation, to develop improved Technical Specifications, to correct previously identified programmatic discrepancies, or to develop the facility's Individual Plant Examination of External Events (IPEEE). The inspectors observed that, due to the nature of these issues, they were unlikely to have been identified via normal surveillance or routine quality assurance activities.

c. Conclusions

Based upon the VY staff having identified the above stated design discrepancies via other than routine quality assurance or surveillance activities and having implemented or planned appropriate corrective actions to resolve the discrepancies and/or prevent recurrence, these "old design issues" were not cited, in accordance with the NRC Enforcement Policy, Section VII.B.3. (NCV 50-271/97-10-11a through 11g) In addition, the associated LERs and IFIs were closed.

E8.4 (Closed) FSAR Update

a. Scope

The inspectors reviewed the following unresolved items identified in IR 97-201 associated with maintaining the FSAR current to assess the licensee's control of the FSAR changes.

b. Observations and Findings

(Closed) NCV 50-271/97-10-12a and URI 50-271/97-201-09: RHR Heat Exchanger Performance - The licensee failed to revise FSAR Table 4.8.1, Figure 4.8-1, Figure 6.4-3, and Section 14.6.3.3.2, Containment Response, when lower than expected RHR heat exchanger performance was found as a result of calculation VYC-1290, Rev. 0, dated August 1, 1994.

(Closed) NCV 50-27197-10-12b and URI 50-271/97-201-28: FSAR Errors - The Vermont Yankee Final Safety Analysis Report, Revision 14, was issued on April 29, 1997. The licensee failed to revise the FSAR when they found the FSAR Figures 4.8-1 and 6.4-3 not current and FSAR sections 6.3, 6.4 and 8.5 not consistent with the design.

These are violations of 10 CFR 50.71(e)(4), in that the FSAR did not reflect all changes up to a maximum of six months prior to the date of filing. However, these violations were considered to be of minor significance and are being treated as non-cited violations, consistent with Section IV of the NRC Enforcement Policy. **(NCV 50-271/97-10-12a and 12b)**

c. Conclusions

The inspectors concluded that the licensee's reviews were effective in identifying FSAR discrepancies. The inspectors also concluded the licensee's configuration management programs that are now in place should identify similar discrepancies, if they exist.

F8 Miscellaneous Fire Protection Issues

F8.1 Inoperable Fire Barrier Penetration Seals Identified in LER 96-26

a. Inspection Scope (64150)

The inspectors reviewed the licensee's corrective actions taken for the resolution of the following deficiency identified in their fire protection program as documented in Licensee Event Report 96-26.

b. Observations and Findings

The inspectors reviewed the resolution of the documented fire protection issue described in the LER. The inspectors noted that the issues were identified by the licensee as a result of an ongoing fire protection improvement program (FPIP) and Appendix R upgrade efforts conducted in response to a previous NRC escalated enforcement action (EA 95-268).

(Closed) NCV 97-10-13 and LER 50-271/96-026: Inadequate Design Implementation and Subsequent Inadequate Documentation of Inspection Findings Result in Operation Outside of Plant Design Basis for Fire Mitigation and Technical Specification Non-Compliance - This event report describes the licensee's discovery of two inoperable fire barrier penetration seals during a refueling outage in October 1996. The seals affected the control building cable vault and were apparently caused by inadequate installation in 1979. In 1993, one of the seals was identified as being inadequate during an improved fire penetration seal inspection. This seal was not repaired at that time. This occurred due to the licensee's inspector erroneously documenting the identification number of the seal requiring repair.

Subsequently, a routine inspection conducted by the licensee in August 1996, revealed errors in the installation and configuration of one of the two seals. This condition led to further discovery of the installation inadequacies of both seals, as well as, the inadequate inspection/repair in 1993.

The licensee repaired both seals. The two seals were of the same design; however, it was a unique design at VY, affecting only these two penetrations. Based on a review of other fire seal deficiencies documented at the site, the installation errors appeared isolated to this design. Finally, the licensee determined that due to many design change implementation process improvements that have occurred since the installation of these seals in 1979, that no additional corrective actions were needed for that program.

c. Conclusions

The inspectors concluded that the licensee's analysis of this event, determination of its root causes, and completion of short-term corrective actions were appropriate. It was further determined that operation of the facility since 1979 with inoperable fire seals was a violation of the technical specifications. Consistent with a prior NRC conclusion as described in NRC Inspection Report 50-271/97-80, in paragraph F8.5, this licensee-identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.4 of the NRC Enforcement Policy (NCV 50-271/97-10-13). This decision was made after consideration that the violation: (1) was identified by licensee staff as part of the corrective action for the previous issues related to Appendix R; (2) had the same root cause as the previous issue; and (3) did not substantially change the safety significance or the character of the regulatory concern arising out of that finding. Additionally, corrective actions, both taken and planned, were comprehensive and reasonable. LER 96-026 is closed.

V. Management Meetings

X1 Exit Meeting Summary

An exit interview was held by the NRC inspectors with Mr. Reid, Mr. Maret and other members of the VY staff on October 3, 1997, to discuss the purpose and findings of this inspection. At that time, the inspectors identified and reviewed the apparent violations noted in this report.

An exit interview was held with Mr. Maret and others on November 20, 1997, where the inspectors discussed the additional licensee-identified design issues documented in LERs, and discussed in this report, but outside the scope of the A/E inspection. The licensee acknowledged the findings of this inspection and had no additional comments.

PARTIAL LIST OF PERSONS CONTACTED

D. Calsyn	Manager, Technical Support
J. DeVincentis	Assistant to Director of Engineering
R. January	Manager, Electrical and I&C Engineering
J. Laughney	QA Supervisor
E. Lindamood	Director of Engineering
G. Maret	Plant Manager
S. Miller	Consultant
D. Reid	Sr. Vice President, Operations
R. Wanczyk	Director, Safety and Regulatory Affairs
D. Yasi	Manager, Nuclear Services

INSPECTION PROCEDURES USED

IP 92903	Engineering Follow-Up
IP 64150	Safe Shutdown Capability Re-verification
IP 02700	Onsite Followup of Written Reports

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

50-271/97-10-01	EEL	Failure to Maintain Design Control
50-271/97-10-02	NCV	RHR/LPCI Flow Rate
50-271/97-10-03	EEL	Inadequate Corrective Action
50-271/97-10-06	VIO	Inadequate Test Control
50-271/97-10-07	VIO	Failure to Perform a Safety Evaluation
50-271/97-10-08	VIO	Failure to Maintain Control of Quality Records
50-271/97-10-09	EEL	Failure to Submit an LER
50-271/97-10-10	NCV	Vernon Tie Voltage
50-271/97-10-11	NCV	Licensee-Identified Design Issues
50-271/97-10-12	NCV	Failure to Maintain the FSAR
50-271/97-10-13	NCV	Fire Barrier Penetration Seals
50-271/97-10-14	URI	Delayed Access Preferred Power Supply

Closed

50-271/97-02-01	IFI	Primary Containment Isolation Logic
50-271/97-02-02	IFI	RHR Keep Fill Design
50-271/97-02-03	IFI	Turbine Building HELB
50-271/97-03-01	IFI	Potential Overpressurization of SBT
50-271/97-03-03	IFI	Potential Flooding of Switchgear Room
50-271/97-03-04	IFI	Turbine Building HELB
50-271/97-03-05	IFI	Adm. Building Fire System Pipe Break
50-271/97-03-06	IFI	Reactor Building Flooding
50-271/97-04-05	IFI	Failure of Non-Seismic Piping

50-271/97-201-01	URI	Suppression Pool Water Temperature
50-271/97-201-02	URI	Untimely Actions to Resolve Suppression Pool Water Temperature Issue
50-271/97-201-03	URI	Failure to Issue an LER
50-271/97-201-04	IFI	Clarification of RHR Pump NPSH Margins and Correction of Calculation Errors
50-271/97-201-05	URI	Non-conservative LPCI Flow Values Used in LOCA Analyses
50-271/97-201-06	URI	Insufficient Technical Basis as Requested by IEB 88-04 for Existing Minimum Flow
50-271/97-201-08	URI	Inappropriate Operating Instructions Regarding RHR Pump Motor Starts
50-271/97-201-09	URI	FSAR Not Updated to Incorporate Reduced RHR Heat Exchanger Capacity
50-271/97-201-10	URI	Entry into TS LCO Conditions when Equipment is Rendered Inoperable
50-271/97-201-11	URI	Timeliness to Followup Self-Assessment of TS Surveillance Requirements
50-271/97-201-13	URI	Incorrect Assumption in the Calculation Methodology for RRU 7 and 8
50-271/97-201-14	URI	Downgrading RRUs 5 and 6 Without a Safety Evaluation
50-271/97-201-15	IFI	Removal of RRU 5&6 from GL 89-13 Program
50-271/97-201-16	URI	Analysis of RHR Heat Exchanger using Tests Measurements Collected and Recorded with Inaccurate or Uncalibrated Instruments
50-271/97-201-17	URI	Change in RHR Heat Exchanger Test Schedule
50-271/97-201-18	URI	Common-Mode Failure of Non Safety-Regulators Affecting Safety-Related Diesel Generators
50-271/97-201-19	URI	Failure to Take Prompt Corrective Action to Revise TS Discrepancy
50-271/97-201-20	URI	Use of PRA to Address Tornado Missiles
50-271/97-201-21	IFI	Vernon 69-KV Switchyard Low Voltage
50-271/97-201-22	URI	Main Station Battery Service Test
50-271/97-201-23	IFI	Standby Battery Charger CAB Single Failure
50-271/97-201-24	IFI	Backfeed Through the Main Transformer
50-271/97-201-25	URI	Cable Separation
50-271/97-201-27	IFI	Excessively High Uncertainty for RHR Flow Indication and Recording Loop
50-271/97-201-28	URI	FSAR Deficiencies and Errors
50-271/97-201-29	URI	Design Control Weakness
50-271/96-242	LER	96-12
50-271/96-567	LER	96-26
50-271/97-129	LER	97-01
50-271/97-060	LER	96-30
50-271/97-280	LER	97-04
50-271/97-281	LER	97-05
50-271/97-437	LER	97-02
50-271/97-438	LER	97-02-01
50-271/97-439	LER	97-04-01
50-271/97-445	LER	97-03
50-271/97-527	LER	97-05-01

Discussed

50-271/97-201-07	URI	RHR Miniflow Protection
50-271/97-201-12	URI	Instrument Accuracy
50-271/97-201-26	IFI	Instrument Setpoint Program

LIST OF ACRONYMS USED

A/E	Architect/Engineer
ANSI	American National Standards Institute
BMO	Basis for Maintaining Operation
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
EEI	Escalated Enforcement Item
ER	Event Report
FSAR	Final Safety Analysis Report
GDC	General Design Criterion
GL	Generic Letter
GPM	Gallons Per Minute
HELB	High Energy Line Break
HPCI	High Pressure Coolant Injection
ICV	Individual Cell Voltage
IFI	Inspector Follow-Up Item
IPEEE	Individual Plant External Event Evaluation
ITS	Improved Technical Specification
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
LPCI	Low Pressure Coolant Injection
NCV	Non-Cited Violation
NPSH	Net Positive Suction Head
PDR	Public Document Room
PRA	Probabilistic Risk Assessment
RHR	Residual Heat Removal
RRU	Room Refrigeration Unit
SBGT	Standby Gas Treatment
SW	Service Water
TS	Technical Specification
QA	Quality Assurance
URI	Unresolved Item
VIO	Violation
VY	Vermont Yankee Nuclear Power Station
YOQAP	Yankee Operational Quality Assurance Plan

A/E INSPECTION TEAM OPEN ITEMS
CROSS REFERENCE TO
IR 97-10 FINDINGS

<u>Item Number</u>	<u>Finding Type</u>	<u>Status</u>	<u>Replaced By New Item Number</u>	<u>Report 97-201 Original Title and Section Reference</u>
50-271/97-201-01	URI	C	EEI 50-271/97-10-01a	Suppression Pool Water Temperature - Past Operation Outside Design Basis (E1.1.2.2.a)
50-271/97-201-02	URI	C	EEI 50-271/97-10-03a	Untimely Actions to Resolve Suppression Pool Water Temperature Issue - 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action (E1.1.2.2.a)
50-271/97-201-03	IFI	C	EEI 50-271/97-10-09a	Failure to Issue an LER (E1.1.2.2.a)
50-271/97-201-04	URI	C	EEI 50-271/97-10-01b	Clarification of RHR Pump NPSH Margins and Correction of Calculation Errors (E1.1.2.2.b)
50-271/97-201-05	URI	C	NCV 50-271/97-10-02	Non-conservative LPCI Flow Valves Used in LOCA Analyses - 10 CFR Part 50, Appendix B, Criterion III, Design Control (E1.1.2.2.c)
50-271/97-201-06	URI	C	EEI 50-271/97-10-01c	Insufficient technical basis as requested by Bulletin 88-04 for existing minimum flow, IEB 88-04 (E1.1.2.2.d)
50-271/97-201-07	URI	Open		Change to LPCI Mode of RHR Operation as described in FSAR (E1.1.2.2.d)

50-271/97-201-08	URI	C	EEI 50-271/97-10-01d	Inappropriate operating instructions regarding RHR pump motor starts, 10 CFR Part 50, Appendix B, Criterion III, Design Control (E1.1.2.2.e)
50-271/97-201-09	URI	C	NCV 50-271/97-10-12a	FSAR Not Updated to Incorporate Reduced RHR Heat Exchanger Capacity - 10 CFR 50.71(e) (E1.1.2.2.f)
50-271/97-201-10	URI	Closed		Entry into TS LCO conditions when equipment is rendered inoperable - TS 3.5.A.2 and TS 3.5.A.3 (E1.1.2.2.g)
50-271/97-201-11	URI	C	EEI 50-271/97-10-03b	Timeliness to Follow-Up Self-Assessment of TS Surveillance Requirements (E1.1.2.2.g)
50-271/97-201-12	URI	Open		
50-271/97-201-13	IFI	C	EEI 50-271/97-10-01e	RRU 7 & 8 - Calculation Methodology, Incorrect Assumption, 10 CFR 50, Appendix B, Criterion III, Design Control (E1.2.2.2.b)
50-271/97-201-14	URI	C	VIO 50-271/97-10-07	Downgrading RRU's 5 and 6 Without a Safety Evaluation, 10CFR50.59, Changes, Tests, and Experiments (E1.2.2.2.c)
50-271/97-201-15	URI	Closed		Deleting RRU's 5 and 6 from the GL 89-13 program, Commitment in Response to Generic Letter GL 89-13 (E1.2.2.2.e)
50-271/97-201-16	URI	C	VIO 50-271/97-10-06	RHR Heat Exchangers - Analysis of Tests Measurements Collected and Recorded with Inaccurate / uncalibrated instruments, 10CFR50, Appendix B, Criterion XII, Control of Measuring and Test Equipment (E1.2.2.2.f)

50-271/97-201-17	URI	Closed		GL 89-13 Commitment - Not Inspecting RHR Heat Exchanger 1B, Commitment in Response to Generic Letter GL 89-13 (E1.2.2.2.g)
50-271/97-201-18	URI	C	EEI 50-271/97-10-01f	Common Mode Failure of Non-Safety regulators Affecting Safety Related Diesel Generators, 10CFR50 Appendix B, Criterion III, Design Control (E1.2.2.2.h)
50-271/97-201-19	URI	C	EEI 50-271/97-10-03c	Effectively Changing a Technical Specification by a Revision to an Operating Procedure, NUREG 1606, Proposed Regulatory Guidance Related to implementation of 10CFR50.53 (E1.2.2.2.j)
50-271/97-201-20	URI	C	EEI 50-271/97-10-03d	Use of PRA to address tornado missiles in lieu of providing positive protection as described in licensing documentation. NRC acceptance of PRA as design and licensing basis may be necessary. (E1.2.2.2.k)
50-271/97-201-21	IFI	C	NCV 50-271/97-10-10	Vernon 69kv switchyard low voltage - 10 CDR Part 50, Appendix B, Criterion III, Design Control (E1.3.3.2.a)
50-271/97-201-22	URI	C	VIO 50-271/97-10-08	Main Station Battery Service Test-10CFR50 Appendix B, Criterion XVII, QA Records (E1.3.3.2.b)
50-271/97-201-23	IFI	C	EEI 50-271/97-10-03e	Standby Battery Charger CAB Single Failure, (E1.3.3.2.c)
50-271/97-201-24	IFI	C	URI 50-271/97-10-15	Unapproved Use Offsite Vernon Tie as Station Blackout AAC Power Source and as Offsite Delayed Access Source of Power (E1.3.3.2.a)

50-271/97-201-25	IFI	Closed		Lack of documentation within separation criteria regarding NEDO 10139 for analysis and documentation of separation exceptions (E1.3.3.2.b)
50-271/97-201-26	IFI	Open		Lack of provisions for instrument drift in Instrument Uncertainty Calculation Methodology (E1.3.3.3.d)
50-271/97-201-27	IFI	C	EEI 50-271/97-10-01g EEI 50-271/97-10-09b	Excessively high Uncertainty for RHR Flow Indication and Recording Loop (E1.3.3.3.e)
50-271/97-201-28	URI	C	NCV 50-271/97-10-12b	FSAR deficiencies and errors (E1.4.3)
50-271/97-201-29	URI	C	EEI 50-271/97-10-01h	Design Control Weakness, (E1.5.3)