February 1, 2006

Mr. Jay K. Thayer
Site Vice President
Entergy Nuclear Operations, Inc.
Vermont Yankee Nuclear Power Station
P.O. Box 0500
185 Old Ferry Road
Brattleboro, VT 05302-0500

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - NRC INTEGRATED INSPECTION REPORT 05000271/2005005

Dear Mr. Thayer:

On December 31, 2005, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vermont Yankee Nuclear Power Station (VY). The enclosed report documents the inspection results which were discussed on January 25, 2006, with members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents two self-revealing findings of very low safety significance (Green). Both of these findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these two findings as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Manual. If you contest any NCV in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at Vermont Yankee Nuclear Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the

NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/ Tracy Walker signed for

Clifford J. Anderson, Chief
Projects Branch 5
Division of Reactor Projects

Docket No. 50-271
License No. DPR-28

Enclosure: Inspection Report 05000271/2005005
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	50-271
Licensee No.	DPR-28
Report No.	05000271/2005005
Licensee:	Entergy Nuclear Operations, Inc.
Facility:	Vermont Yankee Nuclear Power Station
Location:	Vernon, Vermont
Dates:	October 1, 2005 - December 31, 2005
Inspectors:	David L. Pelton, VY Senior Resident Inspector Ed Knutson, VY Senior Resident Inspector (October 1 - November 26) Beth E. Sienel, VY Resident Inspector Ram S. Bhatia, Reactor Inspector, DRS Karl Diederich, Reactor Inspector, DRS Todd H. Fish, Sr. Operations Engineer, DRS Thomas A. Moslak, Health Physicist, DRS James D. Noggle, Senior Health Physicist, DRS Anne DeFrancisco, Reactor Inspector, DRS
Approved by:	Clifford J. Anderson, Chief Projects Branch 5 Division of Reactor Projects

CONTENTS

SUMMARY OF FINDINGS

IR 05000271/2005005; 10/01/05 - 12/31/05; Vermont Yankee Nuclear Power Station; Operability Evaluations and Refueling and Other Outage Activities.

This report covered a 13-week period of inspection by resident and regional reactor inspectors and an announced inspection by a regional senior health physics inspector. Two green findings, both of which were non-cited violations (NCVs), were identified. The significance of most findings are indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process"(SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. A self-revealing, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," was identified in that Vermont Yankee personnel did not adequately evaluate the cause(s) of a spurious high pressure coolant injection system suction realignment from the condensate storage tank to the suppression pool that occurred in 2002. As a result, the cause of the spurious actuation (i.e., degraded condensate storage tank low level alarm units) remained uncorrected and additional spurious actuations occurred in 2005. Entergy entered the issue into their corrective actions program for resolution.

The finding is greater than minor because it is associated with the Equipment Performance Attribute of the Mitigating Systems Cornerstone and because it affects the associated Cornerstone objective. Specifically, not identifying and correcting the cause of the 2002 spurious high pressure coolant injection system suction realignment reduced the reliability of a system that responds to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency; does not represent a loss of system safety function; and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. A contributing cause of this finding is related to the cross-cutting element of problem identification and resolution in that VY personnel did not adequately evaluate the cause(s) of a condition adverse to quality. (Section 1R15)

Green. A self-revealing, non-cited violation was identified for failure to maintain an adequate procedure for the operation of the reactor protection system as required by Vermont Yankee Technical Specification 6.4, "Procedures." Specifically, system interdependencies between the RPS and primary containment isolation system (PCIS) were not accurately described in OP 2134 and went unrecognized by control room operators while transferring the "A" reactor protection system bus power supply. This resulted in an inadvertent Group 4 primary containment isolation signal which isolated shutdown cooling for 18 minutes. Entergy entered this issue into their corrective action program for resolution.

The finding is more than minor because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences; in this case, maintaining less than one loop of RHR in SDC operation. The finding was determined to be of very low safety significance because it did not increase the likelihood of a loss of RCS inventory or degrade Entergy's ability to terminate a leak path or add RCS inventory if needed. Throughout this event, adequate thermal margin was maintained via a calculated RCS time-to-boil of greater than 24 hours. A contributing cause of this finding is related to the cross-cutting element of human performance in that the procedure for operation of RPS was not adequate. (Section 1R20)

B. <u>Licensee Identified Findings</u>

None.

REPORT DETAILS

Summary of Plant Status

Vermont Yankee Nuclear Power Station (VY) entered the inspection period at or near full power. The reactor was shut down on October 21, 2005, in support of a planned refueling outage (RFO 25). Operators took the reactor critical on November 11, following the completion of RFO 25. The reactor was returned to full power operation on November 14. With the exception of planned power reductions for control rod pattern adjustments, the reactor operated at full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope (one sample)

On October 11, the inspectors reviewed the effects of significant rainfall that had occurred at the site during the weekend of October 8-9 to verify that features to mitigate the consequences of flooding had performed as designed. The inspectors reviewed the cause(s) of standing water in the 345 kilovolt (KV) switchyard (a condition which led VY to request off-site fire department assistance) and the cause(s) of water that collected in the discharge structure. The inspectors also reviewed actions taken to prevent the accumulation of excessive debris at the service water (SW) intake; the potential for an undetected accumulation of water in the SW valve pit near Cooling Tower 2 (and its potential to affect on the operability of the alternate cooling system); and the effect of increased SW system silting on safety-related components cooled by the SW system.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

1. Partial Equipment Alignment

a. Inspection Scope (two samples)

The inspectors performed two partial system walkdowns of risk-significant systems to verify system alignment and to identify any discrepancies that could impact system operability. Observed plant conditions were compared to the standby alignment of equipment specified in Entergy's system operating procedures. The inspectors also observed valve positions, the availability of power supplies, and the general condition of selected components to verify there were no obvious deficiencies. The inspectors verified the alignment of the following systems:

- "B" Train of the Emergency Diesel Generator (EDG) System while the "A" Train was out of service for planned maintenance; and
- "A" Train of the shutdown cooling mode of the Residual Heat Removal (RHR) System while the "B" Train was out of service for planned maintenance during RFO 25.

b. Findings

No findings of significance were identified.

2. Complete Equipment Alignment (71111.04S)

a. Inspection Scope (one sample)

The inspectors performed a complete equipment alignment inspection of the accessible portions of the standby liquid control (SLC) system. The inspectors walked down the SLC system and compared actual equipment alignment to approved piping and instrumentation diagrams, operating procedure lineups, the Vermont Yankee updated final safety analysis report (UFSAR), and the Vermont Yankee design basis document. The inspectors observed valve positions, the availability of power supplies, and the general condition of selected components to verify there were no unidentified deficiencies. The inspectors also confirmed that licensee-identified equipment problems had been entered into the corrective action program.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

a. Inspection Scope (five samples)

The inspectors identified fire areas important to plant risk based on a review of Entergy's Vermont Yankee Safe Shutdown Capability Analysis, the Fire Hazards Analysis, and the Individual Plant Examination External Events (IPEEE). The inspectors toured plant areas important to safety in order to verify the suitability of Entergy's control of transient combustibles and ignition sources, and the material condition and operational status of fire protection systems, equipment, and barriers. The following fire areas (FAs) and fire zones (FZs) were inspected.

- West Switchgear Room (FA 5);
- "B" ECCS Corner Room (FZ RB2);
- High Pressure Coolant Injection Corner Room (FZ RB2);
- Reactor Building 318 foot elevation (FZ RB7); and
- Reactor Building 345 foot elevation (FZ RB7).

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (71111.08G)

a. Inspection Scope (four samples)

The inspectors assessed the inservice inspection (ISI) activities using the criteria specified in the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI. The inspectors observed selected in-process non-destructive examination (NDE) activities, reviewed documentation and interviewed personnel to verify that the activities were performed in accordance with the ASME Boiler and Pressure Vessel Code Section XI requirements. The sample selection was based on the inspection procedure objectives and risk priority of those components and systems where degradation would result in a significant increase in risk of core damage. The inspectors reviewed a sample of condition reports (CRs) to assess Entergy's effectiveness in problem identification and resolution. The specific ISI activities selected for review included:

- Observation of the ultrasonic testing (UT) manual technique, UT procedure, calibration test block, and performance of pre-examination calibration for UT of the Reactor Vessel (RV) E-N2 nozzle-to-vessel weld;
- Observation of the UT manual technique, UT procedure, calibration test block, and performance of pre- and post-examination calibration for UT of weld RHR14-S367; a 12 inch diameter reducer-to-valve weld;
- Review of video recordings of VT-1 visual examinations of three separate steam dryer interior welds; and
- Review of the radiographic examination records for weld RHR14-P368A, a 12 inch diameter pipe-to-pipe weld and weld RHR14-S367, a 12" diameter reducer-to-valve weld.

In response to Entergy's extended power uprate request and recent industry operating experience, the inspectors reviewed portions of the steam dryer visual testing (VT) and the documented examination reports. The examination reports documented that 46 crack indications were identified in the steam dryer. These were in addition to indications identified during the Spring 2004 outage. Although the previous dryer inspection was conducted in accordance with ASME code requirements, the inspection performed during the 2005 outage included a technique that provided greater magnification and resolution, similar to an enhanced visual, EVT-1-like quality. The inspectors confirmed Entergy's determination that there was no evidence from the 2005 visual examination that indicated that the previously identified cracks had propagated in width or length since the last inspection. The inspectors also reviewed the basis for Entergy's conclusion that both the newly identified and previously identified crack indications most likely developed in an earlier stage of plant operation. The NRC inspectors reviewed the vendor's technical report in addition to Entergy's evaluation of the steam dryer structural integrity, which included justification for the next operating cycle at the current maximum licensed power level without repair of the indications.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

1. Requalification Activities Review by the Resident Staff (71111.11Q)

a. Inspection Scope (one sample)

The inspectors observed a simulator session for one operating crew to assess the performance of the licensed operators and the ability of Entergy's Training and Operations Department staff to evaluate licensed operator performance. Crew performance was evaluated during simulated events involving an anticipated transient without a scram (ATWS) concurrent with a loss of feedwater and a seismic event that resulted in a torus leak.

The inspectors evaluated the crew's performance in the following areas:

- Clarity and formality of communications
- Ability to take timely actions
- Prioritization, interpretation, and verification of alarms
- Procedure use
- Control board manipulations
- Oversight and direction from supervisors
- Group dynamics

Crew performance in these areas was compared to Entergy management expectations and guidelines as presented in the following documents:

AP 0151	Responsibilities and Authorities of Operations Department Personnel
AP 0153	Operations Department Communication and Log Maintenance
DP 0166	Operations Department Standards

The inspectors also compared simulator configurations with actual control board configurations. For any weaknesses identified, the inspectors observed Entergy evaluators to verify that they also noted the issues to be discussed with the crew.

b. Findings

No findings of significance were identified.

2. In-Office Review of Licensed Operator Requalification Examination Results (71111.11B)

a. Inspection Scope

On November 10, 2005, the inspectors conducted an in-office review of licensee annual operating test results and comprehensive written exam results for 2005. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." The inspectors verified that:

- Crew failure rate was less than 20%. (Crew failure rate was 0%);
- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Individual failure rate was 0%);
- Individual failure rate on the walk-through test was less than or equal to 20%. (Individual failure rate was 0%);
- Individual failure rate on the comprehensive written exam was less than or equal to 20%. (Individual failure rate was 0%); and
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75%. (Overall pass rate was 100%)

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

1. Biennial Periodic Evaluation (71111.12B)

a. Inspection Scope (four samples)

The inspectors reviewed and assessed the effectiveness of Entergy's 10 CFR 50.65(a)(3) periodic evaluation, and the resulting adjustments or corrective action performed since the last inspection. The periodic evaluation covered the period from 11/1/02 to 5/3/04. The inspectors confirmed that the evaluation met the periodicity requirements and that it adequately evaluated performance monitoring activities, associated goals, and preventive maintenance activities.

To aid in determining the effectiveness of Entergy's (a)(3) activities, four maintenance rule in-scope systems, structures, and components (SSCs) that had suffered degraded performance or condition were reviewed. These SSCs were selected based on SSC performance or condition, plant specific risk assessment, past inspection results, and operating experience. The SSCs selected for review included:

- The nuclear boiler system;
- The residual heat removal service water (RHRSW) system;
- The high pressure coolant injection (HPCI) system; and
- The reactor water cleanup (RWCU) system.

The inspectors conducted the review to verify: that the performance of SSCs was being effectively monitored against licensee-established goals which took into account industry operating experience where practical; that goals and performance criteria were appropriate; that balancing of reliability and availability was given adequate consideration; that corrective action plans were adjusted appropriately when performance of SSCs did not meet established goals; that the monitoring was sufficient to provide reasonable assurance that SSCs are capable of fulfilling their intended functions; that monitoring plans were appropriately closed; that performance of SSCs was being effectively controlled through the performance of appropriate preventive maintenance; and that problem identification and resolution of maintenance rule-related issues were addressed.

The inspectors walked down accessible portions of the selected SSCs, interviewed the maintenance rule coordinator, interviewed system engineers, and reviewed documentation for applicable systems. The documents that were reviewed are listed in the attachment to this report.

The inspectors reviewed a sample of condition reports related to maintenance effectiveness and selected SSCs to ensure that problems were identified at an appropriate threshold, characterized, and that adequate corrective actions were implemented.

b. Findings

No findings of significance were identified.

2. Routine Maintenance Effectiveness (71111.12Q)

a. Inspection Scope (two samples)

The inspectors performed two issue/problem-oriented inspections of actions taken by Entergy in response to the “A” recirculation pump field breaker failure to close and the local leakrate testing failure of the inboard HPCI turbine exhaust check valve (V23-3). The inspectors reviewed the UFSAR, system maintenance rule scoping documents, applicable maintenance rule functional failure determinations, system performance evaluations, a(1) action plans, recent system health reports, the 3 year performance history for each system, and corrective actions taken in response to the equipment problems in accordance with station procedures and the requirements of 10 CFR 50.65.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (71111.13)

a. Inspection Scope (four samples)

The inspectors evaluated online and outage risk management for four planned maintenance activities. The inspectors reviewed maintenance risk evaluations, work schedules, recent corrective actions, and control room logs to verify that other concurrent or emergent maintenance activities did not significantly increase plant risk. The inspectors compared reviewed items and activities to requirements listed in Vermont Yankee Administrative Procedures (AP) 0125, "Plant Equipment," AP 0172, "Work Schedule Risk Management - Online," and AP 0173, “Work Schedule Risk Management - Outage.” The inspectors reviewed the following work activities:

Online Maintenance Activities

- Replacement of 4 KV breaker 3V (vernon tie supply to division 1 bus 4); and
- Maintenance to replace a portion of the service water return line from the “A” EDG.

Outage Maintenance Activities

- Planned outage configuration with the 345 KV 1T breaker and both startup transformers out of service; and
- Conduct of the reactor pressure vessel operational system leakage test (designated a high risk evolution).

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (four samples)

The inspectors reviewed four operability determinations prepared by Entergy. The inspectors evaluated the operability determinations against the guidance contained in NRC Inspection Manual, Part 9000, Technical Guidance, “Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety,” as well as Entergy procedure ENN-OP-104, “Operability Determinations.” The inspectors verified the adequacy of the following evaluations of degraded or non-conforming conditions:

- Possible leakage through a primary containment electrical penetration, reference CR 2005-2862;
- Environmental qualification of a reactor vessel level transmitter which inputs to the reactor protection and primary containment isolation systems, reference CRs 2005-3005/3006;

- Adequacy of EDG protection on a loss of field event when the EDG is operating in parallel with the grid, reference CR 2005-3854; and
- Spurious automatic realignment of the HPCI system suction from the condensate storage tank (CST) to the suppression pool (torus).

b. Findings

Introduction: A very low safety significance (Green), self-revealing NCV was identified for failure to adequately evaluate the cause(s) of a condition adverse to quality, as required by 10 CFR 50, Appendix B, Criterion XVI, “Corrective Actions.” As a result, the cause of a 2002 spurious HPCI system suction realignment from the CST to the suppression pool (torus) remained uncorrected and additional spurious actuations occurred in 2005.

Description: In May, 2002, a spurious automatic realignment of the HPCI system occurred. The HPCI system suction is normally aligned to the condensate storage tank CST. By design, if CST level were to decrease to the low level alarm setpoint, the HPCI system suction would automatically realign to the torus. In this case, CST level was normal or approximately 94%. Control room operators were alerted to the issue by annunciator alarms and changes in control panel indications and were able to manually realign the HPCI system suction back to the CST. The issue was entered into the corrective actions program as CR 2002-1144. Additional testing and reviews by design engineering were performed and it was concluded that the most probable cause of the spurious automatic realignment of the HPCI system suction was an induced transient in the CST transmitter cabling due to the routing of these instrument cables adjacent to various other station control circuits. The licensee also concluded that the HPCI system was not “compromised” because of the ability of control room operators to manually realign the HPCI system suction to the CST and because CST minimum inventory to support HPCI operation was not affected. No further actions were taken at that time to address the issue.

In November 2005, the HPCI system suction again spuriously realigned from the CST to the torus on two occasions. Entergy performed an investigation into these events (CRs 2005-3862 and 2005-3896) and determined that the most probable cause identified during the 2002 spurious actuation event was incorrect and that the actual cause was degraded CST low level alarm units (LSL-107-5A/B). These alarm units were subsequently replaced.

Also identified during this investigation, but not discussed in the 2002 investigation, was a potential impact on the HPCI system when aligned to the torus following a design basis accident. The temperature of water in the torus following an accident is assumed to be higher than the temperature of water in the CST (the suction supply for the HPCI system under accident conditions). If a spurious automatic realignment of the HPCI system suction to the torus were to occur under accident conditions and operators did not immediately manually realign the HPCI system suction back to the CST, HPCI system suction temperature could be greater than that assumed in the HPCI design basis. Design engineering determined that the torus would be an acceptable post-accident water source provided the temperature of service water supplied for torus cooling remained at or below 50 ^{0}F.

The inspectors determined that the design basis for the HPCI system was not challenged during any of the above examples of spurious HPCI system suction realignments because operators would have been able to manually realign the HPCI system suction back to the CST in a timely manner and service water temperature was at or below 50 ^{0}F.

Analysis: The performance deficiency associated with this finding is that VY personnel did not adequately evaluate the cause(s) of a 2002 spurious HPCI system suction realignment from the CST to the torus. As a result, the cause of the spurious actuation (i.e., degraded CST low level alarm units) remained uncorrected and additional spurious actuations occurred. The finding is greater than minor because it is associated with the Equipment Performance Attribute of the Mitigating Systems Cornerstone and because it affects the associated Cornerstone objective. Specifically, the failure to identify and correct the cause of the 2002 spurious HPCI system suction realignment reduced the reliability of a system that responds to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," the inspectors conducted an SDP Phase 1 screening. The inspectors determined that the finding was of very low safety significance (Green) because it was not a design or qualification deficiency; did not represent a loss of system safety function; and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

A contributing cause of this finding is related to the cross-cutting element of problem identification and resolution (PI&R). VY personnel did not adequately evaluate the cause(s) of a condition adverse to quality.

Enforcement:

10 CFR 50, Appendix B, Criterion XVI "Corrective Action," states, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified, evaluated, and corrected. AP 0009, "Event Reports," Revision 13 described the licensee's process for prompt identification, evaluation, and correction of conditions adverse to quality including determining the cause(s) of these conditions and assigning appropriate corrective actions. Contrary to the above, in May 2002, VY personnel did not adequately evaluate the cause(s) or the significance of an identified spurious realignment of the HPCI system suction. As a result, the condition was not corrected and two additional spurious realignments of the HPCI system suction occurred in November 2005. Because the finding was of very low safety significance and has been entered into Entergy's corrective actions program (CR 2005-3862), this violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000271/2005005-01, Inadequate Cause Evaluation for a 2002 Spurious HPCI System Suction Realignment.

1R19 Post Maintenance Testing (71111.19)

m. Inspection Scope (six samples)

The inspectors reviewed six post-maintenance testing (PMT) activities on risk-significant systems. The inspectors either directly observed the testing or reviewed completed PMT documentation to verify that the test data met the required acceptance criteria contained in the technical specifications (TS), UFSAR, and inservice testing program. Where testing was directly observed, the inspectors verified that installed test equipment was appropriate and controlled and that the test was performed in accordance with applicable station procedures. The inspectors also ensured that the test activities were adequate to ensure system operability and functional capability following maintenance, systems were properly restored following testing, and any discrepancies were appropriately documented in the corrective action program. The inspectors reviewed the PMTs performed for the following maintenance activities:

- 4 KV breaker 3V, Vernon Tie supply to Division 1 Bus 4 replacement, PMT as specified by work order (WO) 05-001375;
- "A" EDG service water discharge pipe replacement, PMT per OP 4126, "Diesel Generators Surveillance";
- Repair of the "B" EDG load shed relay which failed during the emergency core cooling system (ECCS) integrated test, PMT per OP 4126;
- Reactor core isolation cooling (RCIC) turbine exhaust check valve 13-6 repair following failure of as-found local leakrate testing (LLRT), PMT as specified by WO 05-004027;
- RCIC turbine exhaust check valve 13-7 repair following failure of as-found LLRT, PMT as specified by WO 05-004026; and
- HPCI turbine exhaust check valve 23-3 repair following failure of as-found LLRT, PMT as specified by WO 05-002850.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

b. Inspection Scope (one sample)

The inspectors evaluated the following refueling outage 25 (RFO 25) activities to verify that Entergy considered risk when developing outage schedules; adhered to administrative risk reduction methodologies for plant configuration control; and complied with their operating license, TS requirements, and approved procedures.

Review of the Outage Plan - The inspectors reviewed the RFO 25 outage risk assessment to verify that Entergy addressed the outage's impact on defense-in-depth for the five shutdown critical safety functions; electrical power availability, inventory control, decay heat removal, reactivity control, and containment. Adequate defense-in-depth was verified for each safety function and, where redundancy was limited or not available, the existence of appropriate planned contingencies to minimize the overall risk was verified. Consideration of operational experience was also verified. The daily risk assessments, accounting for schedule changes and unplanned activities, were also periodically reviewed.

Monitoring of Shutdown Activities - The inspectors observed the shut down of the reactor plant including reactor plant cooldown and transition to shutdown cooling operations.

Electrical Power - The inspectors reviewed the status and configuration of safety-related buses throughout RFO 25. The inspectors ensured the electrical lineups met the requirements of TS and the outage risk assessment. The inspectors performed frequent walkdowns of affected portions of the electrical plant including startup transformers, the auxiliary transformer, and the emergency diesel generators.

Decay Heat Removal System Monitoring - The inspectors monitored decay heat removal status on a daily basis. Monitoring included daily reviews of residual heat removal system and spent fuel pool cooling system alignment and reviews of reactor coolant system (RCS) time-to-boil calculations and results.

Inventory Control - The inspectors performed daily RCS inventory control reviews including reviews of available injection systems and flow paths to ensure consistency with the outage risk assessment. The inspectors also ensured that operators maintained reactor vessel and/or refueling cavity levels within established ranges.

Reactivity Control - The inspectors observed reactivity management actions taken by control room operators during refueling evolutions including procedure place keeping, communications with refueling floor personnel, monitoring source range nuclear instrumentation, and monitoring individual control rod positions.

Containment Closure - The inspectors performed a primary containment closeout walkdown prior to final containment closure. The inspectors also ensured secondary containment was maintained as required by TS.

Refueling Activities - The inspectors observed portions of refueling operations, including fuel handling and accounting in the reactor vessel and spent fuel pool. The inspectors also performed an independent core reload verification of approximately 85% of the core.

Heatup and Startup Activities - The inspectors observed portions of the heatup and startup of the reactor plant, including criticality and placing the turbine online, following the completion of RFO 25.

Problem Identification and Resolution - The inspectors also verified that Entergy identified problems related to refueling outage activities and entered them into the corrective action program.

b. Findings

Introduction: A self-revealing, non-cited violation was identified for failure to maintain an adequate procedure for the operation of the reactor protection system as required by Vermont Yankee Technical Specification 6.4, “Procedures.” Specifically, system interdependencies between the RPS and PCIS were not accurately described in the RPS operating procedure and went unrecognized by control room operators while transferring the “A” reactor protection system bus power supply. As a result, when operators shifted RPS bus power supplies, an inadvertent primary PCIS Group 4 isolation occurred resulting in a loss of shutdown cooling (SDC) for 18 minutes.

Description: On November 4, with the reactor shutdown, control room operators were preparing to transfer the “A” RPS bus power supply from the alternate supply to the normal supply in accordance with OP 2134, “Reactor Protection System,” Section C, “Shifting RPS Bus Power Supplies.” By design, the RPS power supply transfer switch operates in a “break-before-make” scheme, which means power to the affected channel (the “A” channel in this case) is momentarily interrupted during switch manipulations. At this time RPS system circuit breaker CB5B was tagged open for planned maintenance. Although the operating crew was aware that the breaker was open, they did not recognize the fact that the breaker supplied power to the “B” channel of PCIS logic. OP 2134, Section C, “Shifting RPS BUS Power Supplies, did not address the fact that primary PCIS logic is also powered from the RPS bus power supplies nor did procedure precautions discuss the impact that shifting the RPS power supply would have on PCIS (i.e., would satisfy half of the logic required for a PCIS actuation to occur).

When operators repositioned the RPS power supply switch, a momentary loss of power to the “A” channel of RPS occurred as expected along with unexpected PCIS isolation. The combination of the power supply switch manipulation and breaker CB5B being open resulted in PCIS isolations occurring for Groups 1, 2A, 3, 4, and 5. Of particular concern was the PCIS Group 4 isolation which isolated the single train suction path for shutdown cooling (SDC) and tripped the operating “B” RHR pump. Operators were able to reestablish a suction path for shutdown cooling and restart the affected RHR pump in approximately 18 minutes. Throughout this event, adequate thermal margin was maintained via a calculated RCS time-to-boil of greater than 24 hours (68 hours). The actual localized temperature rise was approximately 2 degrees Fahrenheit.

Entergy entered this event into their corrective action program as CR 2005-3586. In the associated root cause analysis, Entergy determined the root cause of the event to be an inadequate operating procedure. Specifically, Entergy identified that OP 2134, Section C, “Shifting RPS Bus Power Supplies,” did not identify the fact that the PCIS logic is also powered from the RPS bus power supplies nor did it include information regarding the impact that shifting RPS bus power supplies would have on PCIS (i.e., would satisfy half of the logic required for a PCIS actuation to occur).

Analysis: The performance deficiency associated with this finding is that Entergy did not maintain an adequate procedure for the operation of the RPS. System interdependencies between the RPS and PCIS were not accurately described in OP

2134 and went unrecognized by control room operators ultimately resulting in a loss of shutdown cooling for approximately 18 minutes. The finding is more than minor since it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors conducted a SDP Phase 1 screening of the finding in accordance with IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." The finding was determined to be of very low safety significance (Green) because, although the finding resulted in there being less than one loop of RHR in SDC operation, it did not increase the likelihood of a loss of RCS inventory, degrade Entergy's ability to terminate a leak path or add RCS inventory if needed, or degrade the ability to recover decay heat removal.

A contributing cause of this finding is related to the cross-cutting area of human performance. Entergy did not maintain an adequate procedure for the operation of the RPS.

Enforcement: Vermont Yankee Technical Specification 6.4, "Procedures," Section A requires that, "Written procedures shall be established, implemented and maintained covering the normal startup, operation, and shutdown of systems and components of the facility." OP 2134, "Reactor Protection System," is the procedure used by Entergy for the startup, operation, and shutdown of the RPS including shifting of system power supplies. Contrary to the above, on November 4, 2005, an adequate procedure was not provided for the operation of the RPS. Specifically, OP 2134, Section C, "Shifting RPS BUS Power Supplies, did not address the fact that PCIS logic is also powered from the RPS bus power supplies nor did procedure precautions discuss the impact that shifting the RPS power supply would have on PCIS (i.e., would satisfy half of the logic required for a PCIS actuation to occur). As a result, control room operators were unaware that manipulating the power supply transfer switch, coincident with on-going work on the PCIS, would also initiate a Group 4 isolation and result in a loss of shutdown cooling. Because the finding was of very low safety significance and has been entered into Entergy's corrective action program, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000271/2005005-02, Inadequate Procedure Resulted in the Loss of Shutdown Cooling.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (four samples)

The inspectors observed surveillance testing to verify that the test acceptance criteria specified for each test was consistent with TS and UFSAR requirements, was performed in accordance with the written procedure, the test data was complete and met procedural requirements, and the system was properly returned to service following testing. The inspectors observed selected pre-job briefs for the test activities. The inspectors also verified that discrepancies were appropriately documented in the corrective action program. The inspectors verified that testing in accordance with the following procedures met the above requirements:

OP 4100	ECCS Integrated Automatic Initiation Test;
OP 4121	Reactor Core Isolation Cooling System Surveillance; Section B, "RCIC Injection Check Valve (RCIC-22) Test";
OP 4142	Vernon Tie and Delayed Access Power Source Backfeed Surveillance; Section C, "Delayed Access Power Source Backfeed Test"; and
OP 4030	Type B and C Primary Containment Leakage Rate Testing, for RHR-26A, Drywell Spray Outboard Containment Isolation Valve.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope (eight samples)

During the period October 31 - November 3, 2005, the inspectors conducted the following activities to verify that Entergy was properly implementing physical, administrative, and engineering controls, for access to locked high radiation areas and other radiologically controlled areas, and that workers were adhering to these controls when working in these areas during RFO 25. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, site TS, and Entergy's procedures.

Plant Walkdown and RWP Reviews

- During RFO 25, the inspectors identified exposure significant work areas in the drywell and reactor building. The inspectors reviewed radiation survey maps and radiation work permits (RWP) associated with these areas to determine if the radiological controls were acceptable. Work areas reviewed included reactor vessel nozzles and safety relief valves, located in the drywell.
- On November 1, 2005, the inspectors, accompanied by the Radiation Protection Manager, performed independent surveys of selected areas in the Reactor Building and Turbine Building. On November 2, 2005, the inspectors, accompanied by an as low as is reasonably achievable (ALARA) engineer, performed surveys of selected areas in the drywell. Surveys were conducted to confirm the accuracy of survey maps, the adequacy of postings, and that Technical Specification Locked High Radiation Areas (TSLHRA) and Very High Radiation Areas (VHRA) were properly secured and posted.
- In evaluating RWPs, the inspectors reviewed electronic dosimeter dose/dose rate alarm setpoints to determine if the setpoints were consistent with the survey

indications and plant policy. The inspectors verified that workers were knowledgeable of the actions to be taken when a dosimeter alarms or malfunctions for tasks being conducted under selected RWPs. Work activities reviewed included ISI of reactor vessel nozzles (RWP 05-00077), installing/removing drywell shielding (RWP 05-00063), Control Rod Drive (CRD) setup/demobe rebuild room (RWP 05-00071), and CRD removal/replacement (RWP 05-00074).

- The inspectors reviewed RWPs, airborne surveys, and associated ALARA Work Analyses for potential airborne radioactivity areas located in the drywell to determine if appropriate respiratory protection was used. Respiratory protection evaluations reviewed included “A” recirculation pump seal replacement and CRD removal/replacement.
- The inspectors reviewed Personnel Contamination Event reports and dose assessments for personnel contaminations whose internal dose could potentially exceed 50 mrem, to evaluate the assessment methods. The inspectors confirmed that no contamination incident resulted in an internal (Committed Dose Equivalent) dose exceeding 50 mrem.

High Risk Significant, High Dose Rate HRA, and VHRA Controls

- The inspectors inventoried the keys to VHRAs and TSLHRAs stored at the reactor building control point and in the Radiation Protection Manager’s office to verify that all keys were accounted for.
- The inspectors attended pre-job planning meetings and reviewed the preparations for tasks involving entries into potential TSLHRAs. Tasks reviewed included drywell shielding removal for transferring a safety relief valve out of the drywell and ISI activities on reactor vessel nozzles.
- The inspectors reviewed CRs relative to controlling work activities in high radiation areas to assess the threshold at which CRs were initiated and the timeliness and comprehensiveness of the corrective actions.

b. Findings:

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope (seventeen samples)

During the period October 31 - November 3, 2005, the inspectors conducted the following activities to verify Entergy properly implemented operational, engineering, and administrative controls to maintain personnel exposure ALARA for RFO 25 tasks. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Entergy’s procedures.

Radiological Work Planning

- The inspectors reviewed pertinent information regarding cumulative exposure history, current exposure trends, and ongoing activities to assess current performance and outage exposure challenges. The inspectors determined VY's 3-year rolling collective average exposure and compared it to current trends.
- The inspectors reviewed the refueling outage work scheduled during the inspection period and the associated work activity exposure estimates. Scheduled work included ISI on reactor vessel nozzles and removal of a safety relief valve from the drywell.
- The inspectors reviewed the ALARA Work Analysis Summaries and Work-In-Progress ALARA evaluations that addressed estimating and controlling dose for specific work activities. Work activities reviewed included control rood drive exchanges (05-06-12-01-RF), drywell shielding installation (05-06-11-04-RF), drywell scaffolding installation/removal (05-15-11-03-RF), and miscellaneous drywell work for RFO 25 (05-15-11-06-RF).
- The inspectors reviewed RFO 25 dose summary reports, detailing worker estimated and actual exposures through November 3, 2005, to compare actual exposures and work hours with forecasted data.
- The inspectors evaluated exposure mitigation requirements specified in RWPs and associated ALARA Work Analyses. Jobs reviewed included ISI inspections on reactor vessel nozzles and CRD removal/replacements.
- The inspectors evaluated departmental interfaces between radiation protection, operations, maintenance crafts, and engineering to identify missing ALARA program elements and interface problems. This evaluation was accomplished by interviewing the Radiation Protection Manager, the Principal ALARA Engineer, and a Quality Assurance assessor. Also, the inspectors attended various meetings, including pre-job planning meetings for removal of a relief valve (RV2-71D) from the drywell, and for performing reactor vessel nozzle ISI; an ALARA Committee meeting; and a Radiation Protection Department turnover meeting.
- The inspectors determined if work activity planning included the use of temporary shielding, system flushes, and operational considerations; i.e., scheduling work when prerequisites were completed, to further minimize worker exposure. The inspectors reviewed radiation surveys characterizing the dose reductions following flushing reactor vessel nozzles.

Verification of Dose Estimates and Exposure Tracking Systems

- The inspectors reviewed the assumptions and basis for the annual site collective exposure estimate and the refueling outage dose projection.
- The inspectors reviewed Entergy's response to identifying elevated drywell dose rates upon shutdown, including adjusting outage dose projections, replanning work, and implementing additional dose reduction measures. Relative to responding to elevated vessel nozzle dose rates, the inspectors attended an ALARA Committee meeting to evaluate the exposure controls that would be applied to ISI activities.

- The inspectors reviewed personnel contamination event reports for selected personnel to evaluate the dose assessment methods and the effectiveness of contamination control measures.
- The inspectors reviewed Entergy's exposure tracking system to determine whether the level of dose tracking detail, exposure report timeliness, and exposure report distribution was sufficient to support the control of collective exposures. Included in this review were departmental dose compilations, and individual exposure records.

Job Site Inspection and ALARA Control

- The inspectors observed preparations for reactor vessel nozzle inservice inspections, including placement of temporary shielding and pre-job planning meetings. The inspectors also observed pre-job RWP briefings conducted in the drywell quiet room to determine if radiological controls were properly communicated to the work crews. The inspectors verified that the appropriate radiological controls were implemented including radiation protection coverage, contamination mitigation, properly worn dosimetry, and that workers were knowledgeable of job site radiological conditions.
- The inspectors reviewed the exposure of individuals in selected work groups, including maintenance crafts, to determine if supervisory efforts were being made to equalize doses among workers.

Source Term Reduction and Control

- The inspectors reviewed the current status and historical trends of the site source term. Through interviews with the plant chemist and Radiation Protection Manager, the inspectors evaluated Entergy's source term measurements and control strategies. The inspectors reviewed reactor coolant chemistry data to evaluate the effectiveness of post-shutdown source term reduction efforts. Specific strategies employed included use of advanced ion exchange resins, system flushes, and installation of temporary shielding.

Radiation Worker Performance

- The inspectors observed radiation worker and radiation protection technician performance for selected tasks. Tasks observed included completing preparations for reactor vessel nozzle inspections and removal of a safety relief valve from the drywell. The inspectors determined whether the individuals were aware of radiological conditions and access controls and that their skill level was sufficient for the radiological hazards involved.
- The inspectors reviewed personnel contamination event reports and CRs related to radiation worker and radiation protection technician errors to determine if an observable pattern traceable to a common cause was evident.

Declared Pregnant Workers

- The inspectors confirmed that no declared pregnant workers were employed to perform outage related activities in the radiologically controlled areas.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS3 Radiological Environmental Monitoring Program (REMP) (71122.03)

a. Inspection Scope (ten samples)

- The inspectors reviewed the current Annual Environmental Monitoring Report, and Entergy assessment results, to verify that the REMP was implemented as required by TS and the offsite dose calculation manual (ODCM). The review included changes to the ODCM with respect to environmental monitoring commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data. The inspectors also reviewed the ODCM to identify environmental monitoring stations. In addition, the inspectors reviewed Entergy self-assessments and audits, licensee event reports, inter-laboratory comparison program results, the UFSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation, and the scope of the audit program to verify that it met the requirements of 10 CFR 20.1101.
- The inspectors walked down four air particulate and iodine sampling stations, four ground water sampling locations, and eight thermoluminescent dosimeter (TLD) monitoring locations to verify that they were located as described in the ODCM and equipment material condition was acceptable. In addition, radiation survey measurements were taken at these TLD locations as well as at the State of Vermont Putney and Wilmington background TLD locations for use in comparing State of Vermont and Entergy environmental TLD results.
- The inspectors observed the collection and preparation of a variety of environmental samples to include airborne particulate and iodine samples, water discharge and storm sewer discharge points, and milk samples collected from four farms within 10 miles of the plant. The inspectors verified that environmental sampling was representative of the release pathways as specified in the ODCM and that sampling techniques were in accordance with procedures.
- Based on direct observation and review of records, the inspectors verified that the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Safety Guide 23, and Entergy procedures. The inspectors verified that the meteorological data readout and recording instruments reflecting the control room readout and at the tower were operable and provided the same data values.

- The inspectors reviewed each event documented in the Annual Environmental Monitoring Report which involved a missed sample, inoperable sampler, lost TLD, or anomalous measurement for the cause and corrective actions. The inspectors conducted a review of Entergy's assessment of any positive sample results.
- The inspectors reviewed significant changes made by Entergy to the ODCM as the result of changes to the land census or sampler station modifications since the last inspection. The inspectors also reviewed technical justifications for any changed sampling locations and verified that Entergy performed the reviews required to ensure that the changes did not affect the ability to monitor the impacts of radioactive effluent releases on the environment.
- The inspectors reviewed the calibration and maintenance records for air samplers. The inspectors reviewed: the results of Entergy's interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by Entergy; Entergy's quality control evaluation of the interlaboratory comparison program and the corrective actions for any deficiencies; Entergy's determination of any bias to the data and the overall effect on the REMP; and quality assurance audit results of the program to determine whether Entergy met the TS/ODCM requirements. The inspectors verified that the appropriate detection sensitivities with respect to TS/ODCM are utilized for counting samples and reviewed the results of the quality control program including the interlaboratory comparison program to verify the adequacy of the program.
- The inspectors observed the portal contamination monitors at the main security building and the health physics control point egress from the radiologically controlled area (RCA), where Entergy monitors potentially contaminated material leaving the RCA, and inspected the methods used for control, survey, and release from these areas, including observation of personnel surveying and releasing material for unrestricted use, to verify that the work was performed in accordance with plant procedures.
- The inspectors verified that the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspectors reviewed Entergy's equipment to ensure the radiation detection sensitivities were consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination and HPPOS-221 for volumetrically contaminated material.
- The inspectors reviewed Entergy's audits and self assessments related to the REMP since the last inspection to determine if identified problems were entered into the corrective action program as appropriate. Selected CRs issued since the last inspection were reviewed to determine if Entergy accurately characterized the causes of the identified problems and assigned corrective actions to each commensurate with their safety significance. Any repetitive deficiencies were also assessed to ensure Entergy's self assessment activities were identifying and addressing these deficiencies.

b. Findings

No findings of significance were identified. However, additional information is needed to determine the efficacy of the direct dose calculation methodology in the ODCM Section 6.11.1, Equation 6-27a. Specifically, additional information is needed to:

- Assess whether the radiation survey instruments were performing properly during the direct dose correlation with main steam line radiation monitor reading study; and
- Validate the direct dose calculation results under hydrogen water chemistry operating conditions.

Pending the resolution of the above issues, they are considered to be an unresolved item (URI): URI 05000271/2005005-03, Information Needed to Validate the Direct Dose Calculation Method in ODCM Section 6.11.1.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

a. Inspection Scope (two samples)

The inspectors reviewed Entergy submittals for the performance indicators (PIs) listed below. The PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," and AP 0094, "NRC Performance Indicator Reporting," were used to verify the accuracy and completeness of the PI data reported.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

The inspectors reviewed implementation of Entergy's Occupational Exposure Control Effectiveness Performance Indicator (PI) Program. Specifically, the inspectors reviewed CRs and RCA dosimeter exit logs for the past four (4) calendar quarters. These records were reviewed for occurrences involving locked high radiation areas, very high radiation areas, and unplanned exposures to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators.

Public Radiation Safety Cornerstone

- RETS/ODCM Radiological Effluent Occurrences

The inspectors reviewed a listing of relevant effluent release reports for the past four (4) calendar quarters, for issues related to the public radiation safety performance indicator, which measures radiological effluent release occurrences per site that exceed 1.5 mrem/quarter whole body or 5.0 mrem/quarter organ dose for liquid effluents;

5 mrads/quarter gamma air dose, 10 mrad/quarter beta air dose, and 7.5 mrads/quarter for organ dose for gaseous effluents. The inspectors reviewed the following documents to ensure Entergy met all requirements of the performance indicator: monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases; quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases; and dose assessment procedures.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

1. Routine Review of Identification and Resolution of Problems

a. Inspection Scope

The inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into Entergy's corrective action program at an appropriate threshold and that adequate attention was being given to timely corrective actions. Additionally, in order to identify repetitive equipment failures and/or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into Entergy's corrective action program. This review was accomplished by reviewing selected hard copies of condition reports (a listing of CRs reviewed is included in the Attachment to this report) and/or by attending daily screening meetings.

b. Findings

No findings of significance were identified.

2. Semi-Annual Trend Review (71152)

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a semi-annual trend review to identify trends, either Entergy or NRC identified, that might indicate the existence of a more significant safety issue. Included within the scope of this review were:

- CRs generated from July through December 2005;
- Corrective maintenance backlog listings from July through December 2005;
- The corrective action program 2nd and 3rd Quarter 2005 trend reports; and
- Daily review of main control room operating logs.

b. Findings

No findings of significance were identified.

3. Cross-Reference to PI&R Findings Documented Elsewhere

Section 1R15 describes a finding wherein Vermont Yankee personnel did not adequately evaluate the cause(s) of a condition adverse to quality as required by their corrective actions procedures in regards to a 2002 spurious high pressure coolant injection system suction realignment from the condensate storage tank to the suppression pool. As a result, the cause of the spurious actuation (i.e., degraded condensate storage tank low level alarm units) remained uncorrected and additional spurious actuations occurred in 2005.

4OA3 Event Followup (71153)

(Closed) LER 05000271/2005001-00, Reactor Trip Caused by an Electrical Insulator Failure in the 345 kV Switchyard due to a Manufacturing Defect

On July 25, 2005, a generator load reject trip and subsequent reactor trip occurred as a result of an electrical transient in the 345 kV switchyard. The electrical transient was caused by the mechanical failure of an electrical insulator due to a manufacturing defect. Entergy replaced the failed insulator and the other equipment damaged when the insulator fell. This LER was reviewed by the inspectors and no findings of significance were identified and no violation of NRC requirements occurred. Entergy personnel documented the event in CR 2005-2253. This LER is closed.

4OA5 Other Activities

1. Power Uprate: Commitment Review (71004 & 71005)

a. Inspection Scope

As a result of Entergy's request for an extended power uprate, they completed various modifications to the plant and made commitments to the NRC. The inspectors performed the following reviews to confirm appropriate actions were taken by Entergy with respect to the associated commitments and modifications. (Where applicable, the commitment number as listed in Section 4.0, Regulatory Commitments, in the draft NRC Safety Evaluation - Extended Power Uprate, Vermont Yankee Nuclear Power Station, issued October 21, 2005, is referenced in parentheses.)

- Confirmed the steam dryer was added to the VY Vessel Internals Inspection Program as an augmented exam. (Commitment 13)
- Attended an October 25, 2005, ISO-New England system restoration working group tabletop exercise attended by various local control center operators and power plant operators including Entergy and the owners of the Vernon Hydroelectric Station, the station blackout power supply for VY. A portion of the

exercise confirmed the ability of the Vernon Station to be restored and provide power to VY within the 2 hour coping analysis time frame following a loss of power to the grid. (Commitment 21)

- Confirmed training was completed on and changes were made to OP 2124, Residual Heat Removal System, and OT 3122, Loss of Normal Power. (Commitment 22)
- Confirmed installation of modified isokinetic sample probes in the condensate and feedwater systems. (Commitment 24)
- Discussed the operation and design of the main steam line strain gages and accelerometers and associated instrumentation with the responsible design engineer. Confirmed selected gages and accelerometers were installed in the drywell and condenser bay.

b. Findings

No findings of significance were identified.

2. (Closed) URI 05000271/2004008-04, Ungrounded 480 VAC Electrical System

During the engineering team inspection conducted in 2004, the team found that further NRC review was needed to determine if the facility was in accordance with its design and/or licensing basis, and to determine the safety significance of an issue associated with the 480 volt alternating current (VAC) electrical system. Specifically, further review was needed to determine whether an arcing / intermittent ground fault could cause damage to safety-related motors due to the possible excessive voltages.

In a memorandum dated March 24, 2005, Region I requested the Office of Nuclear Reactor Regulation (NRR) to review the issue under a Task Interface Agreement (TIA). The NRR assessment, forwarded in a memorandum dated October 28, 2005, concluded that VY was in compliance with its licensing basis with respect to the existence of protective devices, and there was no material difference between the VY protective devices design criteria and the industry design criteria. Also, it was determined that the issue was not risk significant because (a) the likelihood of an arcing/intermittent ground fault occurring during a high energy line break or seismic event was low, (b) the occurrence of the arcing ground fault at an intermittent frequency sufficient to produce excessive voltage was more unlikely, and (c) the occurrence of a second arcing ground fault at the same time on the redundant and independent 480 VAC system that also occurs with an intermittent frequency sufficient to produce excessive voltage was not credible. The inspectors reviewed the issue and the NRR assessment and concluded there were no violations of requirements. Based on the above, this URI is closed.

4OA6 Meetings, Including Exit

Resident Exit

On January 25, 2006, the resident inspectors presented the inspection results to Mr. William Maguire and members of the VY staff, who acknowledged the findings. The inspectors asked whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

N. Bollingmo, NDE Coordinator
J. Callaghan, Design Engineering Manager
J. Devincentis, Licensing Manager
J. Dreyfuss, Director of Engineering
M. Hamer, Licensing
D. King, ISI Coordinator
J. Lafferty, IVVI Program Engineer
W. Maguire, General Plant Manager
M. Morgan,Supervisor, Radiation Control
R. Morissette, Principal ALARA Engineer
K. Pushee, Radiation Protection Manager
N. Rademacher, Director of Nuclear Safety Assurance
M. Romeo, Operations Training Superintendent
J. Thayer, Site Vice President
C. Wamser, Operations Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000271/2005005-03	URI	Information Needed to Validate the Direct Dose Calculation Method in ODCM Section 6.11.1 (Section 2PS3)

Opened and Closed

05000271/2005005-01	NCV	Inadequate Cause Evaluation for a 2002 Spurious HPCI System Suction Realignment (Section 1R15)
05000271/2005005-02	NCV	Inadequate Procedure Resulted in the Loss of Shutdown Cooling (Section 1R20)

Closed

05000271/2005001-00	LER	Reactor Trip Caused by an Electrical Insulator Failure in the 345 KV Switchyard due to a Manufacturing Defect (Section 4OA3)
05000271/2004008-04	URI	Ungrounded 480 VAC Electrical System (Section 4OA5.2)

LIST OF DOCUMENTS REVIEWED

Section 1R08: Inservice Inspection

Procedures

ENN-NDE-9.04, Rev. 1
ENN-NDE-9.11, Rev. 0, Manual UT Examination of RPV Welds (Section XI, Appendix VIII)
ENN-NDE-10.05 Rev. 0, Radiographic Examination
NE 8048, Revision 2, In-Vessel Visual Inspection
NE 8067, Revision 3, Reactor Vessel Internals Inspection Details
PP 7027, Revision 3, Reactor Vessel Internals Management Program

Certifications

Team Industrial Services, Inc. Vision Acuity/Washington Group International Certificate of Method Qualification/Washington Visual, Surface Inspection Certification/Performance Demonstration Initiative - PDQS's'/IGSCC Requalification Summary Sheet/AREVA Certificates of Personal Qualification for various examiners

Miscellaneous Documents

Areva/Entergy Visual Inspection Summary Log (2005 Outage)
Areva/Entergy, In-Vessel Visual Inspection Indication Notification Forms
GE RPT-VYR24-04, MJ52F, April 2004, VY R24 IVVI Report
VYR24-04-MJ525, April 2004, Final Report
VY Exterior Steam Dryer Weld ID Drawings
VY Interior Steam Dryer Weld ID Drawings
VY Post Modification Steam Dryer Weld ID Drawings
ENN-NDE-10.05, Rev. 0, Report No. RHR14-P368A, Radiography Examination Report
Entergy UT calibration data sheet, RH14-S367
Entergy UT calibration & indication data sheet, N2E
RFO 25 Steam Dryer Reduced IVVI Scope
GENE-0000-0047-2767, Rev. 1, October 2005, Steam Dryer Unit End Plate Indications
GE SIL No. 644, Revision 1, November 9, 2004, BWR steam dryer integrity

Condition Reports

CR-VTY-2005-03574
CR-VTY-2005-03468
CR-VTY-2005-03523
CR-VTY-2005-03460
CR-VTY-2005-03337
CR-VTY-2005-03374
CR-VTY-2005-03555

Section 1R12: Maintenance Effectiveness

Maintenance Rule Monthly Reports

Maintenance Rule Monthly Report for August 2003, 9/8/03
Maintenance Rule - Monthly Summary Report, 9/8/03
Maintenance Rule - Monthly Detail Report - (a)(1) Systems, 9/8/03
Maintenance Rule - Monthly Detail Report - (a)(2) Systems with specific trend monitoring, 9/8/03
Maintenance Rule - Monthly Detail Report - (a)(2) Systems at or approaching established criteria, 9/8/03
Maintenance Rule - Monthly SSC Status Change Report, 9/8/03
Maintenance Rule - System Annunciator Report, 9/8/03
Maintenance Rule - Preliminary MRFF Determinations, 9/8/03
Maintenance Rule Monthly Report for PRA/EPIX Review, 8/1/03-8/31/03
Maintenance Rule - Monthly Detail Report - (a)(1) Systems, 6/7/04
Maintenance Rule - Monthly Summary Report, 8/15/05

Design Basis Documents

N2_CAD_PCAC, rev 2, 4/18/05, VY NPS DBD for Nitrogen Supply, Primary Containment, Atmospheric Control, and Containment Air Dilution Systems
SWSYS, rev 2, 2/25/05, VY NPS DBD for Service Water Systems: Service Water, Residual Heat Removal Service Water, and Alternate Cooling Systems
RHR Service Water Maintenance Rule Scoping Basis Document, rev 5, 9/9/04
Alternate Cooling (ACS) Maintenance Rule Scoping Basis Document, rev 2, 9/30/04
Service Water (SW) Maintenance Rule Scoping Basis Document, rev 7, 6/13/05

Drawings

G-191159, sh 1, rev 72, 4/12/05, Flow Diagram Service Water System
G-191159, sh 2, rev 85, 4/22/05, Flow Diagram Service Water System
G-191165, sh 2, rev 44, 12/2/03, Flow Diagram Sampling System
G-191169, sh 1, rev 47, ½3/03, Flow Diagram High Pressure Coolant Injection System
G-191169, sh 2, rev 43, 12/6/04, Flow Diagram High Pressure Coolant Injection System
G-191172, rev 64, 4/3/03, Flow Diagram Residual Heat Removal System
G-191178, sh 1, rev 49, 4/14/04, Flow Diagram Reactor Water Clean-up System
G-191178, sh 2, rev 21, ½3/03, Flow Diagram Reactor Water Clean-up System

System Health Reports

System Health Report, RWCU, Q2, 2005
System Health Report, RHRSW, Q2, 2005
System Health Report, NB (Nuclear Boiler), Q2, 2005
System Health Report, HPCI, Q2, 2005

Condition Reports

CR 2004-00955, 2003-01654, 2003-02119, 2003-00463, 2003-00464, 2003-00839, 2003-01470, 2003-01654, 2003-02155, 2004-00883, 2004-00272, 2004-00942, 2004-00955

Miscellaneous Documents

VY Technical Evaluation 2003-066, rev 0, 9/22/03, PSA Updated Evaluation of Maintenance Rule Unavailability Performance Criteria
Maintenance Rule Cycle 23 Periodic Assessment, 6/29/05
Maintenance Rule Cycle 22 Periodic Assessment, 10/15/03, tab 1
AP0096, rev 5, 4/7/05, Procedure Development, Review, Issuance, and Cancellation
DP00119, rev 0, 8/4/05, Establishing Maintenance Rule Performance Criteria
ENN-DC-121, rev 2, 5/20/04, Maintenance Rule
ENN-DC-171, rev 2, 7/8/04, Maintenance Rule Monitoring
VY-E-75-002, rev 20, 6/2/05, Engineering Flow Diagram Containment Atmosphere Dilution System (CAD)
Work Week 541 schedule, all work for 10/2-10/8
Entergy Nuclear Vermont Yankee Organization Chart, 3/14/05
Entergy Nuclear Vermont Yankee Phone List, 4/19/05
VY NPC 13 Week Schedule Matrix, 7/8/05
SMRC 2003-016, 8/5/03, Simplification of RHRSW Motor Cooling Lines to Improve Reliability
SSC Performance History (3 year basis), RHRSW, 10/5/05
MRULE-2003-03PE_01, rev 0, 7/30/03, Performance Evaluation for ACS Alternate Cooling System, to remain in (a)(2) and performance trend
MRULE-2000-013PE_00 MRULE-2002-26PE_01, rev 4, 12/4/02, PE for RWCU
MRULE-2003-02PE_01, rev 0, 4/1/03, Performance Evaluation for RWCU
MRULE-2003-12PE_01, rev 0, 12/4/03, PE for RWCU
MRULE-2002-07PE_02, rev 1, 12/5/02, PE for Nuclear Boiler System (NB) Nuclear Steam Supply (NSS) Subsystem
ER 2003-02321, rev 0, 1/8/04, PE for RHRSW Pump Train C
LO-VTYLO-2004-00186 CA-9, rev 0, 7/21/04, Performance Evaluation for NB System
VYNPS Maintenance Rule (a)(1) to (a)(2) Disposition Memorandum, 12/19/02
LO-VTYLO-2004-00186 CA-00007, rev 0, 4/8/04, Performance Evaluation for RWCU
LO-VTYLO-2004-00186 CA-00013, rev 0, 8/31/04, Performance Evaluation for RWCU
LO-VTYLO-2004-00186 CA-00018, rev 0, 12/03/04, Performance Evaluation for RWCU
OE18258, 4/27/04, Main Steam Isolation Valve Local Leak Rate test failure investigation results

Section 2OS1: Access Control to Radiologically Significant Areas and Section 2OS2: ALARA Planning and Controls

Procedures:

OP 0502, Rev 39	Radiation Work Permits
OP 0506, Rev 24	Personnel Monitoring
OP 0532, Rev 21	Locked High Radiation Area Door Key Control
OP 0083, Rev 4	Installation and Removal of Temporary Shielding

ALARA Review Packages:

AR 05-15-11-03 RF	Install & Remove Scaffolding for RFO 25
AR 05-15-11-04-RF	Drywell Temporary Shielding/Installation on N1 & N2 Nozzles
AR 05-06-12-01-RF	CRD Exchanges
AR 05-06-12-01-RF	Drywell Setup & Demobe for CRD Activities
AR 05-15-11-06 RF	Miscellaneous Drywell Activities for RFO 25

Miscellaneous Documents:

Vermont Yankee Five Year ALARA Plan
Vermont Yankee RFO 25 Drywell Dose Control and Contingency Course of Action
ALARA Committee Meeting Minutes for meeting nos. 05-07, 05-06, 05-05

Condition Reports:

2005-3255, 2005-3257, 2005-03202, 2005-03087, 2005-03137, 2005-03154, 2005-03185, 2005-03194, 2005-03238, 2005-03285, 2005-03338, 2005-03432, 2005-03238, 2005-03355, 2005-03262, 2005-03376, 2005-03381, 2005-03395, 2005-03477, 2005-03478, 2005-3574, 2005-03468, 2005-03523, 2005-03460, 2005-03337, 2005-03374, 2005-03555.

Quality Assurance Reports:

QS-2005-VY-020	Quality Verification of RFO 25 Dose Estimate
QS-2005-VY025	Assessment from Reactor Shutdown through Outage Week One
O2C-VY-2005-0071	Observation - High Radiation Area Controls
O2C-VY-2005-0125	Observations of CRD Removal Activities
O2C-VY-2005-0127	Observations of Personnel Exposure Admin Controls
O2C-VY-2005-0054	Observations of Radiological Controlled Area Postings

Section 2PS3: Radiological Environmental Monitoring Program (REMP)

Condition Reports

CR 2004-3838, 2004-3653, 2004-3589, 2004-3276, 2004-1831, 2004-2625, 2004-0045, 2004-0203, 2005-2490, 2005-3061, 2005-2181, 2005-0214, 2005-0245, 2005-2743

Miscellaneous Documents

QA Department Audit Report QA-6-2005-VY-1, Effluent and Environmental Monitoring
OP 5335, Rev. 17, “Primary Meteorological System Functional Calibration Tests”
OP 5343, Rev. 15, “Backup Meteorological System Functional Calibration Test”
VYC-2067, “Evaluation of –16 Dose Contribution at West Site Boundary”
VYC-2194, Rev. 1, “Vermont Yankee Site Boundary Direct Dose Calculation Methodology”
Areva revised summary report, “In Situ Measurements Performed at Vermont Yankee Nuclear Power Station,” December 6, 2005

Section 4OA2.1: Routine Review of Identification and Resolution of Problems

Condition Reports

2005-2207	"A" recirc breaker failed to close during first attempt to start the recirc pump
2005-2253	Reactor scram caused by a failed insulator on the T-1 MOD in the switchyard/
2005-2862	Electrical penetration requires frequent repressurization
2005-2888*	Critical plant equipment signs out of place during 3V breaker replacement
2005-2938	345KV switchyard had 6 inches of standing water after heavy rain
2005-2964	Breaker 3V PMT could not be completed as written
2005-2965	Condition report not issued in a timely manner
2005-3003*	Small cracks identified on dust covers for "B" UPS battery cells
2005-3005	Inadvertent half-scram occurred while working on reactor level transmitter
2005-3006	Reactor water level transmitter declared inoperable due to equipment qualification issues
2005-3018	Half-scram occurred while replacing light bulb during surveillance test
2005-3028	"A" EDG jacket cooling water heat exchanger relief valve coupling has approximately two threads left
2005-3037	"A" EDG jacket cooling water heat exchanger relief valve as-found setpoint test failure
2005-3199	RCIC turbine exhaust check valve V13-7 failed Appendix J LLRT
2005-3200	RCIC turbine exhaust check valve V13-6 failed Appendix J LLRT
2005-3204	HPCI turbine exhaust check valve V23-3 failed Appendix J LLRT
2005-3239*	HPCI steam supply low pressure bypass switch not placed in warmup between 135-145 psig as required by procedure
2005-3264	Outage risk report did not adequately provide logic ties to an OPDRV (CRD changeouts) for removing "B" RHR subsystem from service or for reactor disassembly activities
2005-3265	Outage risk report contained contradictory conditions for removal of "B" RHR from service
2005-3306	"C" Outboard MSIV V2-86C failed Appendix J LLRT
2005-3317*	TS LCO log not maintained during shut down
2005-3339	Incorrect ORAM determination
2005-3347	V23-3 repetitive failure
2005-3362	Refuel bridge grapple problem
2005-3389	Refuel bridge broke down
2005-3404	Interface sleeve dropped into fuel pool
2005-3576*	Improper installation of main steam line plugs extends time in higher risk configuration
2005-3578	While stroking RHR 27B closed from full open, the breaker tripped
2005-3584	Incorrect trip settings for breakers in MCC-89A and MCC 89B
2005-3586	Unexpected PCIS Group 1,2,3,4,5 Isolations, including loss of SDC
2005-3592	Newly installed EQ RPS power supply failed PMT
2005-3615	Capacitor bank deficiencies
2005-3620	I&C chart recorder data did not show "B" RHR pump start during ECCS test
2005-3622	Loss of "B" EDG during ECCS test

2005-3623	Preparations for ECCS test resulted in torus level higher than allowed by procedure
2005-3624	Loss of power supply to array recorder during ECCS test
2005-3625	Manual diesel loading not completed during ECCS test
2005-3652	Automatic start of RRU-9 on CRD not verified during ECCS test
2005-3749*	Mis-interpretation of strip chart used for ECCS test timing results in minor errors in times
2005-3768	Unusual vibration detected in “A” reactor recirc MG set when placed in operation
2005-3798	High alarm on containment particulate monitor
2005-3854	The “A” and “B” EDG loss of field relays may not adequately protect the EDGs when operating in parallel with the grid
2005-3862	Unexpected alarm HPCI CST level low - suction valves swapped to torus
2005-3886*	Obsolete signs posted in the cable vault and HVAC room
2005-3888*	Fire protection equipment located in contaminated area on refuel floor

* Indicates inspector-identified issues.

LIST OF ACRONYMS

ACS	Alternate Cooling System
ADAMS	Automated Document Access Management System
ALARA	As Low As Is Reasonably Achievable
AP	Vermont Yankee Administrative Procedure
ASME	American Society of Mechanical Engineers
ATWS	Anticipated Transient Without Scram
CAD	Containment Air Dilution
CFR	Code of Federal Regulations
CR	Condition Report
CRD	Control Rod Drive
CST	Condensate Storage Tank
DP	Vermont Yankee Department Procedure
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
FA	Fire Area
FZ	Fire Zone
HPCI	High Pressure Coolant Injection
IPEEE	Individual Plant Examination External Events
ISI	Inservice Inspection
KV	Kilovolt
LER	Licensee Event Report
LLRT	Local Leakage Rate Testing
MRFF	Maintenance Rule Functional Failure
MSIV	Main Steam Isolation Valve
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NEI	Nuclear Energy Institute
NPC	Nuclear Power Corporation

NPS	Nuclear Power Station
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
ODCM	Offsite Dose Calculation Manual
OP	Vermont Yankee Operating Procedure
PARS	Publically Available Records
PCIS	Primary Containment Isolation System
PE	Periodic Evaluation
PI	Performance Indicator
PMT	Post Maintenance Testing
PP	Vermont Yankee Program Procedure
RCA	Radiologically Controlled Area
RCS	Reactor Coolant System
RCIC	Reactor Core Isolation Cooling
REMP	Radiological Environmental Monitoring Program
RFO	Refueling Outage
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RV	Reactor Vessel
RWCU	Reactor Water Clean Up
RWP	Radiation Work Permit
SDC	Shutdown Cooling
SDP	Significance Determination Process
SLC	Standby Liquid Control
SSC	Structure, System, Component
SW	Service Water
TIA	Task Interface Agreement
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications
TSLHRA	Technical Specification Locked High Radiation Areas
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
UT	Ultrasonic Testing
VAC	Volt Alternating Current
VHRA	Very High Radiation Areas
VT	Visual Testing
VY	Vermont Yankee
WO	Work Order