

October 20, 2005

Mr. Jay K. Thayer  
Site Vice President - Vermont Yankee  
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 PROBLEM  
IDENTIFICATION AND RESOLUTION NRC INSPECTION REPORT  
NO. 05000271/2005006

Dear Mr. Thayer:

On September 29, 2005, the US Nuclear Regulatory Commission (NRC) completed a team inspection at your Vermont Yankee Nuclear Power Station. The enclosed inspection report documents the inspection findings, which were discussed at an exit meeting on September 29, 2005, with you and members of your staff.

This inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems, and compliance with the Commission's rules and regulations and the conditions of your license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

On the basis of the sample selected for review, there were no findings of significance identified during this inspection. The team concluded that the implementation of the corrective action program at Vermont Yankee was generally good with respect to problem identification, evaluation of issues, and effectiveness of corrective actions.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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/**

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

Mr. Jay K. Thayer

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

Enclosure: Inspection Report No. 05000271/2005006  
w/Attachment: Supplemental Information

cc w/encl:

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Mr. Jay K. Thayer

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 50-271

License Nos: DPR-28

Report Nos: 05000271/2005006

Licensee: Entergy Nuclear Operations, Inc.  
P. O. Box 0500  
185 Old Ferry Road  
Brattleboro, VT 065302-0500

Facility: Vermont Yankee Nuclear Power Station

Location: 320 Governor Hunt Road  
Vernon, Vermont 05354-9766

Dates: September 12 - 29, 2005

Team Leader: B. S. Norris, Senior Project Engineer, Division of Reactor Projects

Inspectors: W. Raymond, Senior Resident Inspector, Pilgrim  
A. Rosebrook, Project Engineer, Division of Reactor Projects  
T. Setzer, Project Engineer, Division of Reactor Projects  
G. Bowman, Reactor Inspector, Division of Reactor Safety

Observer: D. Tifft, Reactor Engineer, Division of Reactor Projects

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000271/2005-006; 09/12/2005 - 09/29/2005; Vermont Yankee Nuclear Power Station;  
Biennial Baseline Inspection of the Identification and Resolution of Problems

This team inspection was performed by four regional inspectors and one resident inspector. No findings of significance were identified.

### Identification and Resolution of Problems

The team determined that implementation of the corrective action program (CAP) at Vermont Yankee was generally good. The team determined that Entergy was effective at identifying problems and entering them in the CAP. Once entered into the system, the items were screened and prioritized in a timely manner using established criteria. Items entered into the CAP were properly evaluated commensurate with their safety significance. The causal evaluations for equipment issues/events and for human performance/process issues reasonably identified the causes of the problems and developed appropriate corrective actions. Corrective actions were typically implemented in a timely manner.

#### a. NRC Identified and Self-Revealing Findings

No findings of significance were identified.

#### b. Licensee-Identified Violations

None.

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

#### 4OA2 Problem Identification and Resolution (Biennial - IP 71152B)

##### 1. Effectiveness of Problem Identification

##### a. Inspection Scope

The inspection team reviewed the procedures, listed in the Attachment to this report, describing the corrective action program (CAP) at Entergy's Vermont Yankee Nuclear Power Station (VYNPS). Entergy identifies problems by initiating Condition Reports (CRs) for conditions adverse to quality, human performance problems, equipment nonconformances, industrial or radiological safety concerns, and other significant issues. The CRs are subsequently screened for operability, categorized by priority and significance (A through D), and assigned for evaluation and resolution. The station uses the Entergy Paperless Condition Reporting System (PCRS).

The team reviewed CRs selected across the seven cornerstones of safety in the NRC's Reactor Oversight Program to determine if problems were being properly identified, characterized, and entered into the CAP for evaluation and resolution. The team selected items from the maintenance, operations, engineering, emergency planning, security, radiological control, training, and oversight programs to ensure that Entergy was appropriately considering problems identified in each functional area. The team used this information to select a risk-informed sample of CRs that had been issued since the last NRC Problem Identification and Resolution (PI&R) inspection, which was completed in June 2003.

In addition to CRs, the team selected items from other processes at Vermont Yankee to verify that they appropriately considered problems identified in these areas for entry into the corrective action program. Specifically, the team reviewed a sample of work orders, engineering requests, operator log entries, control room deficiency and work-around lists, operability determinations, engineering system health reports, completed surveillance tests, current temporary configuration change packages, and training requests. The documents were reviewed to ensure that underlying problems associated with each issue were appropriately considered for resolution via the corrective action process. In addition, the team interviewed plant staff and management to determine their understanding of and involvement with the PCRS. The CRs and other documents reviewed, and a list of key personnel contacted, are listed in the Attachment to this report.

The team reviewed a sample of Entergy's Quality Assurance audits, including the most recent audit of the CAP, the CAP quarterly trend reports, and the departmental self-assessments. This review was performed to determine if problems identified through these evaluations were entered into PCRS, and whether the corrective actions were properly completed to resolve the deficiencies. The effectiveness of the audits and self-assessments was evaluated by comparing audit and self-assessment results

against self-revealing and NRC-identified findings, and current observations during the inspection.

The team considered risk insights from the NRC's and Entergy's risk analyses to focus the sample selection and plant tours on risk-significant components. The team determined that the five highest risk-significant systems were the high pressure coolant injection system, reactor core isolation cooling system, residual heat removal system, emergency core cooling system low pressure interlock, and depressurization logic. For the selected risk-significant systems, the team reviewed the applicable system health reports, and a sample of work requests, engineering documents, plant log entries, and results from surveillance tests and maintenance tasks.

b. Findings and Assessments

No findings of significance were identified.

The team concluded that Entergy was generally effective at problem identification at the Vermont Yankee station. The station staff had appropriate knowledge of PCRS and the CAP, and identified problems and entered them into the program at an appropriate threshold. There were approximately 4,000 CRs initiated per year. Station staff promptly initiated CRs, as appropriate, in response to deficiencies or issues raised by the inspection team. The team did not identify any significant issues in the maintenance, engineering, or training tracking systems which did not have a CR associated with them, as appropriate. The team considered the audits and self-assessments to be generally good, with some significant issues identified and entered into the CAP.

However, the team did discover one minor example of a failure to identify a condition adverse to quality. The team noted during the review of an audit of radiation protection (QA-14-2004-VY-01) that a contractor alarmed the exit portal monitors (PM-7) twice, but did not notify the radiation protection (RP) department as required by procedure and a local posting. The contractor exited the site with his tools and other personal items, took the items to his car, and then returned to the site and informed RP he had alarmed the PM-7. Follow-up surveys by RP of the contractor and the items in the car found no contamination. The event follow-up was witnessed by a Quality Assurance (QA) auditor. Neither the RP technician nor the QA auditor initiated a CR to document the violation of their radiation worker practices policy. Condition Reports 2005-2761 and 2005-2762 were written to document the team's observations.

2. Prioritization and Evaluation of Issues

a. Inspection Scope

The inspection team reviewed the CRs listed in the attachment to the inspection report to assess whether Entergy adequately evaluated and prioritized the identified problems. The team selected the CRs to cover the seven cornerstones of safety identified in the NRC's Reactor Oversight Program. The team also considered risk insights from the

Vermont Yankee Probabilistic Risk Analysis to focus the CR sample. The review was expanded to five years for Entergy's evaluation of problems associated with thermal overloads on motor operated valves, including incorporation of industry operating experience information for applicability to their facility.

The CRs reviewed encompassed the full range of Entergy evaluations, including root cause analysis, apparent cause evaluations, and most probable cause. The review included the appropriateness of the assigned significance, the scope and depth of the causal analysis, the timeliness of the resolutions. For significant conditions adverse to quality, the team reviewed Entergy's corrective actions to preclude recurrence. The team observed the Condition Report Group (CRG) meeting, in which Entergy managers reviewed incoming CRs for prioritization, and evaluated preliminary corrective action assignments, analyses, and plans. The team also reviewed equipment operability determinations, reportability assessments, and extent-of-condition reviews for selected problems. The team assessed the backlog of corrective actions, including the backlog in the maintenance and engineering departments, to determine, individually and collectively, if any represented an increased risk due to delays in implementation. The team further reviewed equipment performance results and assessments documented in completed surveillance procedures, operator log entries, and trend data to determine whether the equipment performance evaluations were technically adequate to identify degrading or non-conforming equipment.

b. Findings and Assessments

No findings of significance were identified.

The team concluded that Entergy screened the CRs appropriately and properly classified them for significance. There were no items in the engineering and maintenance backlogs that were risk significant, individually or collectively. The team noted that significant conditions adverse to quality were classified as Category "A" and received a formal root cause analysis and an extent-of-condition review. Less significant conditions, Category "B" and "C," typically received an apparent cause evaluation or a most probable cause review. The majority (. 99%) of the CRs written were for less significant issues. The quality of the causal analyses was generally good. The causal analysis for equipment issues and events were thorough. Noteworthy is the fact that causal analyses for softer issues, such as human performance and process, were also of good quality.

However, the team did note an example where the causal analysis did not have documentation to support some of the conclusions. The team reviewed Entergy's actions related to an NRC finding (FIN 2004009-02 - Failure to Assign Continuous On-Shift Capability to Read the Facility Seismic Monitoring System for Emergency Classification Purposes) concerning the inability to implement, in a timely manner, a portion of the Emergency Plan to determine if an earthquake exceeded the emergency action level (EAL) for an Alert declaration. The licensee had relied on off-shift personnel to respond to the station to obtain data from the seismic monitoring instrumentation to determine whether a seismic event had exceeded the operational basis earthquake



(OBE) levels at the site. The licensee initially reviewed the issue in CR-2004-2420, and determined that their interpretation was in compliance with the requirements of 10CFR50.47(b)(2). Nonetheless, they trained the shift technical advisors (STAs) to obtain the data to determine whether the OBE levels were exceeded. After the inspection report was issued, the licensee wrote CR-2004-3483 to document that the original CR did not adequately address the NRC conclusion. Overall, their response was acceptable since both portions of the EAL could be implemented using on-shift resources. However, while the corrective actions were acceptable, the causal evaluations for both CRs did not address what Entergy process weakness allowed the deficiency to occur. Further, the CR responses did not address an extent-of-condition (EOC) review, or evaluate that the additional duty would not conflict with the STA's primary role to monitor the plant conditions during emergencies. Based on discussions with the licensee, the team determined that the EOC reviews and evaluation of the STA's duties had been completed, but not documented. The licensee concluded the additional STA task would not detract from STA's duties during transients. In addition, the team verified Entergy's determination that on-shift resources were adequate to implement all other EALs. Condition Reports 2005-2827 and 2005-2829 were written to document the team's observations.

### 3. Effectiveness of Corrective Actions

#### a. Inspection Scope

- (1) The team reviewed the corrective actions associated with selected CRs to determine whether the actions addressed the identified causes of the problems. The team reviewed CRs for repetitive problems to determine whether previous corrective actions were effective. The team also reviewed Entergy's timeliness in implementing corrective actions and their effectiveness in precluding recurrence of significant conditions adverse to quality. The team reviewed the CRs associated with selected non-cited violations and findings to determine whether Entergy properly evaluated and resolved these issues.
- (2) The team reviewed Entergy's corrective actions for four of the non-cited violations (NCVs) identified during the engineering team inspection in August 2004, using Temporary Instruction (TI) 2515/158, as documented in NRC Inspection Report 05000271/2004008. For each NCV, the team verified that the licensee had entered the issue into the corrective action program, had completed an adequate causal analysis and extent-of-condition review, and had taken appropriate corrective actions. In cases where corrective actions had not yet been completed at the time of this inspection, the team verified that Entergy had established and documented plans for completion in a time frame commensurate with risk.

#### b. Findings and Assessments

- (1) No findings of significance were identified.

The team concluded that Entergy generally determined corrective actions that were appropriate, effective, and completed in a timely manner. For significant conditions

adverse to quality, corrective actions were identified to prevent recurrence. In addition, Entergy conducted effectiveness reviews to determine if the corrective actions were still adequate. The team noted the incorporation of industry operating experience information in the determination of the corrective actions, as appropriate. However, the team noted two minor examples of inadequate corrective actions.

Entergy personnel identified (CR 2004-2370) that the weld rod used during a modification on the residual heat removal service water piping, was drawn from an uncontrolled weld rod oven. The oven was originally controlled by a contractor; when Entergy changed contractors, control of the oven was lost. Although they believed that the oven was always turned on, Entergy addressed the issue of potential weld porosity as if the oven was not on at the time the weld rod was drawn. Their conclusion was that weld porosity would result from delayed hydrogen cracking, which would be visible on the surface of the weld within 48 hours and would only require visual inspection. Hydrogen cracking is a potential failure mechanism, but it is not the only potential failure mechanism; subsurface weld porosity could also be the result of weld rod that was not maintained hot. However, since Entergy's investigation into the issue determined that there was reasonable assurance that the weld rod oven was always energized, the NRC does not have a concern with the welds. Condition Report 2005-2837 was written to document the team's observation.

In September 2003, a packing leak on a reactor head vent manual valve forced the plant to shut down. The root cause was determined to be inadequate consolidation of the valve packing. The associated maintenance procedure had been changed due to a similar packing leak in 2001; however, at that time, the reactor head vent valve was not identified as also being packed incorrectly. As a result of the 2003 leak, Entergy compiled a list of all the manual valves which needed to have the packing consolidated. In addition, all the torque values for the gland nuts were calculated by engineering and added to the list. The root cause analysis recommended that the torque values be incorporated into the procedure to prevent recurrence; however, the corrective action failed to incorporate the values into the procedure. Condition Report 2005-2818 was written to document the team's observation.

- (2) No findings of significance were identified.

In the case of NCV 2004008-01 (Availability of Power from the Vernon Station), the licensee had completed an acceptable evaluation of the time needed to restore the Vernon Hydro-Electric Station following a grid-centered station blackout (SBO). The licensee's evaluation concluded that, in the worst case, it would take approximately two hours to make this source available to supply power to the plant. The licensee had also completed calculations showing that the station could cope with, and recover from, an SBO lasting for at least two hours. Calculations had been completed for both present conditions, and for the conditions that would exist following the licensee's proposed extended power uprate (EPU). The calculations were found to consider all appropriate inputs, and contained reasonable and conservative assumptions. The team did not identify any deficiencies with Vermont Yankee's corrective actions for this violation.

However, this issue is still under review by the NRC's Office of Nuclear Reactor Regulation (NRR) as part of the EPU review.

In response to NCV 2004008-09 (Failure to Establish Adequate Motor-Operated Valve (MOV) Periodic Test Program), the team found that the licensee had completed actions to revise their MOV testing program to provide for validation of the motor control center test method. The validation program included periodic verification of the test method over an extended interval. Additionally, the licensee formalized their program for trending and evaluating MOV performance. The revised test program included evaluation of MOV test results against applicable design requirements. The team reviewed Entergy's procedures for implementation of both the MOV test program and the trending and data evaluation programs, and found them to be adequate. The time frame for implementation of the revised MOV program was consistent with the guidance contained in NRC Generic Letter (GL) 89-10 (Safety-Related Motor-Operated Valve Testing and Surveillance), and GL 96-05 (Periodic Verification of Design-Basis Capability of Safety-Related Power-Operated Valves). The team's review of Entergy's corrective actions found them to be acceptable. However, this issue remains under review by NRR as part of the EPU review process.

The team's review of the two violations related to the reactor core isolation cooling (RCIC) system lube oil cooling supply (NCV 2004008-05, Cooling Water Supply Portion of RCIC System Not Installed per Design Basis, and NCV 2004008-06, Failure to Correct Non-Conforming RCIC Pressure Control Valve) identified that Entergy had not completed actions to correct these deficiencies. The team reviewed the evaluation that Entergy had completed to show that the RCIC system remained operable, and found it to be acceptable. Entergy had completed an adequate causal analysis, including an extent-of-condition review, but at the time of the inspection, had not corrected the deficiencies nor developed a formal design change plan. Entergy had originally planned to replace the non-conforming valve during the upcoming refueling outage; but because of unexpected complexity in the design, the corrective actions had been deferred until the end of the year. The team reviewed the guidance contained in GL 91-18 (Resolution of Degraded and Nonconforming Conditions) and determined that while the licensee's actions could have been completed earlier, the issue did not constitute a violation because deferral of the corrective actions was reasonable, and was appropriately documented and justified based on risk. The NRC will review the licensee's corrective actions after the modification package has been approved for installation.

#### 4. Assessment of Safety Conscious Work Environment

##### a. Inspection Scope

During the interviews with station personnel, the team assessed the safety conscious work environment (SCWE) at the Vermont Yankee station. Specifically, the team assessed whether people were hesitant to raise safety concerns to their management and/or the NRC. The team also reviewed Entergy's Employee Concerns Program (ECP) to determine if employees were aware of the program and had used it to raise

concerns. The team also reviewed a sample of the ECP files to ensure that issues were entered into the corrective action program.

b. Findings and Assessments

No findings of significance were identified.

The team determined that the plant staff were aware of the importance of having a strong SCWE and expressed a willingness to raise safety issues. All of the personnel interviewed had an adequate knowledge of the CAP and ECP. No one interviewed had experienced retaliation for safety issues raised. Based on these limited interviews, the team concluded that there was no evidence of an unacceptable SCWE.

4OA6 Meetings, including Exit

On September 29, 2005, the team presented the inspection results to Mr. Jay Thayer, Vermont Yankee Site Vice President, and other members of the Vermont Yankee staff, who acknowledged the findings. The inspectors confirmed that no proprietary information reviewed during inspection was retained.

**ATTACHMENT:** Supplemental Information

In addition to the documentation that the inspectors reviewed (listed in the attachment), copies of information requests given to the licensee are in ADAMS, under accession number ML052870443.

## ATTACHMENT - SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee Personnel:

W. Aho, Operating Experience Engineer  
R. Booth, Component Engineer - Relief & Check Valves  
J. Callaghan, Manager, Design Engineering  
J. DeVincentis, Manager, Licensing  
J. Dreyfuss, Director, Engineering  
K. Farabaugh, Supervisor, System Engineering  
R. Felumb, Technical Support Coordinator  
V. Ferrizzi, Control Room Supervisor  
B. Finn, Manager, Corrective Action Program  
J. Geyster, Superintendent of Radiation Control  
M. Gosekamp, Operations Training Superintendent  
C. Hansen, Design Engineer - Components  
D. Hensel, Radiation Protection Manger  
W. McQuire, General Manager Plant Operations  
R. Morrisett, ALARA Engineer  
M. Palionis, Probabilistic Risk Assessment Engineer  
A. Pallang, Technical Support Coordinator  
W. Penniman, Self-Assessment Coordinator  
N. Rademacher, Director, Nuclear Safety  
A. Robertshaw, Design Engineer - Fluid Systems  
J. Rogers, Supervisor, Design Fluid Systems  
P. Ryan, Manager, Security Operations  
J. Thayer, Site Vice President  
J. Twarog, Operations Standards Supervisor  
C. Wamser, Manager, Operations  
R. Wanczyk, Manager, Nuclear - Employee Concerns Program  
T. White, Manager, Quality Assurance  
M. Wilson, Manager, Emergency Preparedness

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Discussed

05000271/2004008-01 NCV Availability of Power from the Vernon Station  
05000271/2004008-05 NCV Cooling Water Supply Portion of RCIC Not Installed per Design Basis  
05000271/2004008-08 NCV Failure to Correct Non-Conforming RCIC Pressure Control Valve  
05000271/2004008-09 NCV Failure to Establish Adequate MOV Periodic Test Program

## LIST OF DOCUMENTS REVIEWED

### **Procedures:**

AP-0536, Reactor Disassembly and Assembly, Revision 17  
 EN-LI-102, Corrective Action Process, Revision 2  
 EN-LI-104, Self-Assessment and Benchmark Process, Revision 1  
 EN-LI-118, Root Cause Analysis Process, Revision 0  
 EN-LI-119, Apparent Cause Evaluation (ACE) Process, Revision 3  
 EN-LI-121, Entergy Trending Process, Revision 1  
 EN-MA-123, Identification and Trending of Rework, Revision 0  
 EN-OE-100, Operating Experience, Revision 1  
 EN-OP-111, Operational Decision-Making Issue (ODMI) Process, Revision 0  
 EN-PL-187, Safety Conscious Work Environment (SCWE) Policy, Revision 0  
 EN-TQ-201, Systematic Approach to Training Process, Revision 0  
 EN-TQ-208, Training Requests for Performance Improvement, Revision 0  
 EN-WM-100, Work Request (WR) Generation, Screening, and Classification, Revision 0  
 ENN-DC-112, Engineering Request and Project Initiation Process, Revision 5  
 ENN-DC-114, Project Management, Revision 3  
 ENN-DC-115, ER Response Development, Revision 5  
 ENN-DC-143, System Health Reports, Revision 5  
 ENN-DC-311, MOV Periodic Verification, Revision 0  
 ENN-DC-331, MOV Program, Revision 0  
 ENN-EP-S-008, Periodic Verification of Motor-Operated Valves, Revision 0  
 ENN-EP-S-011, MOV Program, Revision 0  
 ENN-OP-104, Operability Determinations, Revision 2  
 OP-2112, Reactor Water Clean-Up System, Revision 34  
 OP-2124, Residual Heat Removal System, Revision 51  
 OP-2142, 4 KV Electrical System, Revision 20  
 OP-5217, MOV Motor Control Center (MC<sup>2</sup>) Testing, Revision 3  
 OP-5281, Valve Packing Guidelines, Revision 0  
 OP-5287, Evaluation of MOV Motor Control Center Testing, Revision 3  
 OP-52104, MSIV Actuator Refurbishment, Revision 0  
 OP-52106, MSIV Troubleshooting and Repair Procedure, Revision 0  
 OT-3122, Loss of Normal Power, Revision 20

### **Quality Assurance Audits/Surveillances:**

QS-2004-VY-01, FFD/AA (January 2004)  
 QA-06-2004-VY, RETS/REMP/ODCM (January 2004)  
 QA-14-2004-VY, Radiation Protection (March 2004)  
 QA-20-2004-VY, Refueling Audit for RFO24 (March 2004)  
 QA-16-2004-VY, Security (June 2004)  
 QA-19-2004-VY, Training - Operations (June 2004)  
 QA-07-2004-VY, Emergency Preparedness (August 2004)  
 QA-08-2004-VY, Engineering Programs (September 2004)  
 QA-03-2004-VY, Corrective Action Program (October 2004)  
 QA-12-2005-VY, Operations (January 2005)  
 QA-02-2005-VY, Chemistry (January 2005)  
 QA-01-2005-VY, FFD/AA (February 2005)

QA-04-2005-VY, Engineering Design Control (February 2005)  
 QA-07-2005-VY, Emergency Plan (April 2005)  
 QA-03-2005-VY, Corrective Action Program (May 2005)

**Self Assessments:**

VTYLO-2003-00321, Reactor Engineering Core Functions (October 2003)  
 VTYLO-2003-00327, Flow Accelerated Corrosion (September 2003)  
 VTYLO-2004-00039, Licensed Operator Requalification Training (February 2004)  
 VTYLO-2004-00062, Predictive / Preventative Maintenance (July 2004)  
 VTYLO-2004-00082, Operations Training Programs Objectives 1-6 (June 2004)  
 VTYLO-2004-00093, Human Performance (September 2004)  
 VTYLO-2004-00095, Self-Assessment of Self-Assessment Program, (October 2004)  
 VTYLO-2004-00166, Rework Identification - INPO AFI (June 2004)  
 VTYLO-2004-00180, Radiation Protection Portable Instrumentation (June 2004)  
 VTYLO-2004-00220, eSOMS Tagging Software Implementation (July 2004)  
 VTYLO-2004-00423, Electrical Safety (August 2004)  
 VTYLO-2004-00512 & -00098, Conduct of Drills & Exercises (November 2004)  
 VTYLO-2004-00551, Exercise Readiness (April 2005)  
 VTYLO-2004-00553, Corrective Action Program Effectiveness (May 2005)  
 VTYLO-2004-00597, Confined Space (May 2005)

**Condition Reports (\* denotes an CR generated as a result of this inspection):**

1998-0872	2003-1913	2003-2325	2003-2698	2004-0617	2004-1108	2004-2077
2000-0842	2003-1935	2003-2327	2003-2720	2004-0639	2004-1118	2004-2114
2001-0105	2003-1939	2003-2344	2004-0001	2004-0642	2004-1126	2004-2132
2001-0113	2003-1943	2003-2378	2004-0018	2004-0644	2004-1171	2004-2267
2001-0795	2003-1952	2003-2389	2004-0021	2004-0681	2004-1225	2004-2292
2001-0999	2003-2028	2003-2409	2004-0030	2004-0735	2004-1229	2004-2303
2002-0533	2003-2055	2003-2431	2004-0077	2004-0841	2004-1268	2004-2342
2003-0658	2003-2057	2003-2460	2004-0089	2004-0854	2004-1287	2004-2370
2003-1133	2003-2075	2003-2464	2004-0095	2004-0855	2004-1382	2004-2421
2003-1685	2003-2076	2003-2471	2004-0120	2004-0861	2004-1383	2004-2422
2003-1686	2003-2080	2003-2498	2004-0166	2004-0866	2004-1407	2004-2453
2003-1699	2003-2116	2003-2510	2004-0172	2004-0871	2004-1412	2004-2460
2003-1704	2003-2117	2003-2517	2004-0197	2004-0875	2004-1497	2004-2484
2003-1722	2003-2143	2003-2518	2004-0217	2004-0882	2004-1548	2004-2509
2003-1732	2003-2172	2003-2519	2004-0237	2004-0885	2004-1554	2004-2510
2003-1761	2003-2193	2003-2520	2004-0264	2004-0887	2004-1683	2004-2511
2003-1789	2003-2199	2003-2532	2004-0392	2004-0889	2004-1684	2004-2525
2003-1804	2003-2202	2003-2535	2004-0401	2004-0898	2004-1710	2004-2535
2003-1828	2003-2208	2003-2535	2004-0436	2004-0918	2004-1728	2004-2568
2003-1872	2003-2217	2003-2541	2004-0448	2004-0936	2004-1854	2004-2595
2003-1873	2003-2259	2003-2548	2004-0457	2004-0938	2004-1931	2004-2623
2003-1877	2003-2264	2003-2622	2004-0473	2004-0955	2004-1961	2004-2644
2003-1893	2003-2269	2003-2630	2004-0476	2004-1017	2004-1995	2004-2657
2003-1900	2003-2277	2003-2648	2004-0493	2004-1061	2004-1996	2004-2677
2003-1906	2003-2319	2003-2674	2004-0508	2004-1099	2004-1997	2004-2687
2003-1908	2003-2321	2003-2692	2004-0546	2004-1107	2004-2065	2004-2693

2004-2713	2004-3207	2004-3600	2005-0226	2005-0926	2005-1451	2005-1962
2004-2715	2004-3221	2004-3626	2005-0249	2005-0932	2005-1452	2005-2196
2004-2738	2004-3227	2004-3719	2005-0270	2005-0946	2005-1492	2005-2212
2004-2739	2004-3234	2004-3728	2005-0309	2005-0974	2005-1521	2005-2223
2004-2746	2004-3240	2004-3729	2005-0463	2005-1011	2005-1535	2005-2391
2004-2798	2004-3306	2004-3763	2005-0484	2005-1043	2005-1623	2005-2639*
2004-2802	2004-3318	2004-3765	2005-0499	2005-1055	2005-1625	2005-2643*
2004-2898	2004-3319	2005.2772	2005-0549	2005-1061	2005-1627	2005-2655*
2004-2985	2004-3320	2005-0002	2005-0568	2005-1181	2005-1669	2005-2761*
2004-3000	2004-3369	2005-0004	2005-0615	2005-1201	2005-1736	2005-2762*
2004-3029	2004-3383	2005-0061	2005-0640	2005-1233	2005-1752	2005-2818*
2004-3042	2004-3471	2005-0198	2005-0689	2005-1235	2005-1758	2005-2827*
2004-3058	2004-3518	2005-0199	2005-0730	2005-1251	2005-1790	2005-2829*
2004-3079	2004-3520	2005-0200	2005-0743	2005-1340	2005-1814	2005-2836*
2004-3137	2004-3536	2005-0201	2005-0825	2005-1428	2005-1922	2005-2837*
2004-3160	2004-3564	2005-0213	2005-0850	2005-1449	2005-1940	

### **Non-Cited Violations and Findings Reviewed:**

FIN 2003007-01, Two of Nine Operating Crews Failing Their Facility-Administered Annual Simulator Examinations

NCV 2003007-02, Failure to Provide Adequate Work instructions Resulted in "B" Service Water Header Degradation

NCV 2003008-01, Alternate Shutdown Capability was not Independent for a Fire in the Control Room or Cable Spreading Room

NCV 2003008-02, Failure to Implement Adequate Corrective Actions for Relief Valve Test Failures

NCV 2004002-01, Did Not Perform Adequate Extent of Condition Review Following Identification of An Improperly Installed RCIC Valve Packing

NCV 2004003-01, Ineffective Corrective Actions Assigned Following a May 2001 Trip of the "C" RHR System Pump During SDC Operation

FIN 2004005-02, Entergy Exceeded the Original ALARA Estimate for Reactor Reassembly by 72% Due to Ineffective Coordination and Control of Radiological Work Activities

FIN 2004005-03, Did Not Effectively Incorporate Operating Experience into the Preventive Maintenance Strategy for the 22 Kilovolt Electrical System

NCV 2004005-Licensee Identified, Failure to Provide an Adequate Procedure for Corrective Maintenance on the "B" Inboard MSIV Resulted in a Failed LLRT

NCV 2004006-02, Entergy Did Not Notify the NRC of a Licensed Senior Operator's Medical Condition

NCV 2004008-01, Availability of Power from the Vernon Station

NCV 2004008-05, Cooling Water Supply Portion of RCIC Not Installed per Design Basis

NCV 2004008-06, Failure to Correct Non-Conforming RCIC Pressure Control Valve

NCV 2004008-09, Failure to Establish Adequate MOV Periodic Test Program

NCV 2004009-02, Failure to Assign Continuous On-Shift Capability to Read the Facility Seismic Monitoring System for Emergency Classification Purposes

NCV 2004010-01, Failure to Provide Isolation of Normal Control Power Source for RCIC Steam Supply Line Isolation Valve

FIN 2005002-01, Technician Did Not Follow Non-Safety Related Maintenance Procedure Which Resulted in a Reactor Water Level and Power Perturbation



**Operating Experience Reviews:**

10CFRPart 21, Turbine Control System Impact in Transient Analyses  
 10CFRPart 21, Non-Conservative Safety Limit Minimum Critical Power Ratio  
 CR-GGN-2005-1608, Conflict in Design Bases and Operations Surveillance Allowable Stroke Times  
 CR-OEN-2005-0150, Part 21 Cutler Hammer Thermal Overload Relays  
 CR-VTY-2000-0842, Thermal Overload Test Failure  
 CR-VTY-2002-2178, FDW-11A Thermals Tripped  
 CR-VTY-2002-2377, Core Spray Discharge Valve Thermal Overload Trip  
 CR-VTY-2004-2713, RCIC Valve V13-131 Thermal Overload Test Failure  
 NRC GL 2003-01, Control Room Habitability  
 NRC IN 1997-78, Crediting of Operator Actions in Place of Automatic Actions and Modifications of Operator Actions, Including Response Times  
 NRC IN 1998-22, Deficiencies Identified During NRC Design Inspections  
 NRC IN 2002-06, Design Vulnerability in BWR Reactor Vessel Level Instrumentation Backfill Modification  
 NRC IN 2003-03, Part 21 - Inadequately Staked Capscrew Renders Residual Heat Removal Pump Inoperable  
 NRC IN 2004-20, Recent Issues Associated with NRC Medical Requirements for Licensed Operators  
 NRC IN 2005-11, Internal Flooding/Spray-Down of Safety-Related Equipment due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Floor Drains  
 NRC IN 2005-16, Outage Planning and Scheduling - Impacts on Risk  
 OE-17053, Inadequate Enforcement of Procedure Adherence Results in an Adverse Trend in Rework Issues and Results in Ineffective Corrective Actions to Reduce Rework Issues  
 OE-19126, Thermal Overload Trip on Diesel Radiator Fan  
 OE-20210, Failure of GE Overload Relays

**Maintenance Work Requests:**

2003-01926	2003-58630	2003-58923	2004-02562	2004-60242	2004-62012	2005-63600
2003-03059	2003-58809	2004-00408	2004-04955	2004-60282	2005-63542	2005-63690
2003-05508	2003-58843	2004-00409	2004-04956	2004-60390	2005-63581	2005-63699
2003-05623	2003-58910	2004-00410	2004-60129	2004-60459		

**Engineering Requests:**

2004-0489	2004-0892	2004-1004	2004-1500	2004-4955	2005-0184	2005-0530
2004-0543	2004-0914	2004-1194	2004-3187	2004-4956	2005-0501	2005-0572
2004-0597	2004-0945	2004-1312	2004-3188	2005-0168	2005-0520	2005-0749
2004-0888	2004-0986					

**System Health Reports:**

Containment Air Detection, 2<sup>nd</sup> Quarter, 2005  
 Fire Protection Program, 2<sup>nd</sup> Quarter, 2005  
 High Pressure Coolant Injection, 2<sup>nd</sup> Quarter, 2005  
 Motor-Operated Valve Program, 1<sup>st</sup> & 2<sup>nd</sup> Quarters, 2005  
 Nuclear Boiler, 2<sup>nd</sup> Quarter, 2005

Reactor Core Isolation Cooling, 2<sup>nd</sup> Quarter, 2005  
Reactor Water Clean-Up, 2<sup>nd</sup> Quarter, 2005  
Residual Heat Removal, 2<sup>nd</sup> Quarter, 2005  
RHR Service Water, 2<sup>nd</sup> Quarter, 2005

**Calculations:**

VYC-1628D, Torus Temperature Response to Appendix R and Station Blackout Scenarios, Revision 0  
VYC-2398, Torus Temperature Calculation for a Station Blackout at Extended Power Uprate, Revision 0  
VYC-2405, Drywell Temperature Calculation for a Station Blackout at Extended Power Uprate, Revision 0

**Drawings:**

G-191174, Flow Diagram - Reactor Core Isolation Cooling System, Sheet 2, Revision 17  
G-191298, Main One Line Wiring Diagram, Sheets 1, Revision 36  
G-191298, Main One Line Wiring Diagram, Sheets 2, Revision 10  
G-191298, Main One Line Wiring Diagram, Sheets 3, Revision 1

**Miscellaneous:**

ALARA Analysis #05-01-14-01, Cavity Decontamination Step Text, Revision 0  
ALARA Analysis #04-01-09-02, In-vessel Work and Refueling, Revision 0  
ALARA Analysis #04-01-14-01, Reactor Disassemble, Reassemble, and Cavity Decontamination, Revision 0  
BVY 04-101, Extended Power Uprate - Additional Information Related to Request for Additional Information EMEB-B-5, September 30, 2004  
Corrective Action Process Quarterly Trend Reports for 3<sup>rd</sup> Quarter 2004, 4<sup>th</sup> Quarter 2004, and 1<sup>st</sup> Quarter 2005  
HPCI Design Basis Document, Revision 2  
LER 95-007, Automatic Reactor Scram During Plant Startup  
LO-VTYLO-2005-00060, VYC-2398 Unverified Assumptions and Affected Documents per ENN-DC-126  
Operations Performance Indicators for August 2005  
Operations Performance Indicators for August 2005  
Operator Logs, September 23, 2003 to September 27, 2003  
Radiation Worker Summary of Personnel Contamination Events for RFO-24, Revision 0  
RCIC Design Basis Document, Revision 1  
Risk Importance Measures Report for High Pressure Coolant Injection and Reactor Core Isolation Cooling System Motor-Operated Valves  
SYSENG 2004-099, Evaluation of Plant Response to Grid Collapse, September 1, 2004  
TEAR/Task User's Guide  
Training Handout, Safety Culture - Supervisor Interaction Skills  
Training Handout, Conservative Decision Making  
Training Handout, Safety Conscious Work Environment - The Role of the Management Team  
VY Relief Valve Testing Program Excellence Plan, Revision 0

**LIST OF ACRONYMS**

AA	Alcohol Abuse
ALARA	As Low As Reasonably Achievable
CAP	Corrective Action Program
CR	Condition Report
CRG	Condition Review Group
EAL	Emergency Action Level
ECP	Employee Concerns Program
EOC	Extent-of-Condition
EPU	Extended Power Uprate
FFD	Fitness for Duty
FIN	Finding
GL	NRC Generic Letter
IN	NRC Information Notice
KV	Kilovolt
MOV	Motor Operated Valve
MSIV	Main Steam Isolation Valve
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OBE	Operational Basis Earthquake
PCRS	Paperless Condition Reporting System
PI&R	Problem Identification and Resolution
QA	Quality Assurance
RCIC	Reactor Core Isolation Cooling
RP	Radiation Protection
SBO	Station Blackout
SCWE	Safety Conscious Work Environment
STA	Shift Technical Advisor
TEAR	Training Evaluation and Action Requests
TI	Temporary Instruction
VYNPS	Vermont Yankee Nuclear Power Station