



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
2100 RENAISSANCE BLVD., SUITE 100  
KING OF PRUSSIA, PA 19406-2713

August 4, 2014

Mr. Christopher Wamser  
Site Vice President  
Entergy Nuclear Operations, Inc.  
Vermont Yankee Nuclear Power Station  
Vernon, VT 05354

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION – NRC INTEGRATED  
INSPECTION REPORT 05000271/2014003

Dear Mr. Wamser:

On June 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vermont Yankee Nuclear Power Station. The enclosed inspection report documents the inspection results, which were discussed on July 14, 2014, with you and other 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.

Based on the results of this inspection, no violations of NRC requirements were identified.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the

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Sincerely,

*/RA/*

Raymond R. McKinley, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

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

Enclosures: Inspection Report 05000271/2014003  
w/ Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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## U.S. NUCLEAR REGULATORY COMMISSION

## REGION I

Docket No. 50-271

License No. DPR-28

Report No. 05000271/2014003

Licensee: Entergy Nuclear Operations, Inc.

Facility: Vermont Yankee Nuclear Power Station

Location: Vernon, VT 05354

Dates: April 1, 2014 through June 30, 2014

Inspectors: S. Rutenkroger, PhD, Senior Resident Inspector, Division of Reactor  
Projects (DRP)  
S. Rich, Resident Inspector, DRP  
N. Day, Project Engineer, DRP  
J. Furia, Senior Health Physicist, Division of Reactor Safety (DRS)  
T. Hedigan, Operations Engineer, DRS  
R. Latta, Senior Reactor Inspector, DRS, Region IV

Approved by: Raymond R. McKinley, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

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**SUMMARY**

IR 05000271/2014003; 04/01/2014 – 06/30/2014; Vermont Yankee Nuclear Power Station;  
Routine Integrated Inspection Report.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

## REPORT DETAILS

### Summary of Plant Status

Vermont Yankee Nuclear Power Station (VY) began the inspection period operating at 100 percent power. On April 7, 2014, operators reduced power to 60 percent for a control rod sequence exchange and seal replacements on the “C” reactor feedwater pump. On April 8, operators increased power to 70 percent and returned VY to 100 percent power on April 10. On June 22, operators reduced power to 60 percent for another control rod sequence exchange and seal replacements on the “A” and “B” reactor feedwater pumps. On June 23, operators increased power to 80 percent. On June 26, operators returned VY to 100 percent power and maintained VY at or near 100 percent power for the remainder of the inspection period.

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

1R01 Adverse Weather Protection (71111.01 – 2 samples)

#### .1 Readiness for Seasonal Extreme Weather Conditions

##### a. Inspection Scope

The inspectors performed a review of Entergy’s readiness for the onset of seasonal high temperatures. The review focused on the service water/alternate cooling system and the station blackout diesel generator. The inspectors reviewed the technical specifications, engineering changes, and the corrective action program to determine what temperatures could challenge these systems, and to ensure Entergy personnel had adequately prepared for these challenges. The inspectors reviewed station procedures, including Entergy’s seasonal weather preparation procedure and applicable operating procedures. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during hot weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment.

##### b. Findings

No findings were identified.

#### .2 Summer Readiness of Offsite and Alternate Alternating Current (AC) Power Systems

##### a. Inspection Scope

The inspectors performed a review of plant features and procedures for the operation and continued availability of the offsite and alternate AC power system to evaluate readiness of the systems prior to seasonal high grid loading. The inspectors reviewed Entergy’s procedures affecting these areas and the communications protocols between the transmission system operator and Entergy. This review focused on changes to the established program and material condition of the offsite and alternate AC power equipment. The inspectors assessed whether Entergy established and implemented

appropriate procedures and protocols to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system. The inspectors evaluated the material condition of the associated equipment by interviewing design engineers, reviewing condition reports and open work orders, and walking down portions of the offsite and alternate AC power systems.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial System Walkdowns (71111.04Q – 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- “B” residual heat removal service water (RHRSW) with “A” RHRSW out of service for maintenance on April 10
- “A” emergency diesel generator (EDG) during “A” residual heat removal subsystem maintenance on April 16
- High pressure coolant injection system (HPCI) with “A” EDG out of service on April 30
- “B” core spray following maintenance on May 22

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the Updated Final Safety Analysis Report (UFSAR), technical specifications, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Entergy staff had properly identified equipment issues and entered them into the corrective action program for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.



1R05 Fire ProtectionResident Inspector Quarterly Walkdowns (71111.05Q – 5 samples)a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Entergy controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Cable vault on April 1
- Reactor building, elevation 280', on April 21
- Reactor building, elevation 318', on April 24
- East and west switchgear rooms on April 24
- Reactor building, elevation 303', on April 25

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)Annual Review of Cables Located in Underground Bunkers/Manholesa. Inspection Scope

The inspectors conducted an inspection of underground manholes subject to flooding that contain cables whose failure could affect risk-significant equipment. The inspectors performed walkdowns of risk-significant areas, including manholes MH-13 containing cables to the cooling towers and MH-16 containing cables to the plant stack. The inspectors verified that cables were not submerged in water, that cables and splices appeared intact, that cable support structures were adequate and that the sump pumps were operating properly. The inspectors reviewed the corrective action program and interviewed the cable program engineer to verify manual manhole dewatering efforts were adequate.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A – 1 sample)a. Inspection Scope

The inspectors reviewed the “B” standby fuel pool cooling heat exchanger to determine its readiness and availability to perform its safety functions. The inspectors reviewed the design basis for the component and verified that the number of plugged heat exchanger tubes did not exceed the maximum amount allowed. The inspectors observed the heat exchanger internals after hydrolazing and reviewed the results of quarterly heat exchanger testing. The inspectors verified that Entergy initiated appropriate corrective actions for identified deficiencies.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11 – 2 samples).1 Quarterly Review of Licensed Operators’ Regualification Testing and Traininga. Inspection Scope

The inspectors observed licensed operator simulator training on May 19, which involved an anticipated transient without scram followed by failure of manual actions to insert control rods. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classification made by the shift manager and the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Rooma. Inspection Scope

The inspectors observed control room operators on April 8, during single rod scram time testing, main steam isolation valve closure timing quarterly surveillance testing, and planned reactor power changes. The inspectors observed the pre-job brief to verify that roles and responsibilities, critical steps, expected results, and hold points were discussed. The inspectors verified that procedure use, crew communications, and response to alarms met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, corrective action program documents, maintenance work orders, and maintenance rule basis documents to ensure that Entergy was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and verified that the (a)(2) performance criteria established by Entergy staff were reasonable. Additionally, the inspectors ensured that Entergy staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Service water system
- Residual heat removal system

c. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 4 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Entergy performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Entergy personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Entergy performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's work week manager to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- "A" residual heat removal preventive maintenance and "C" reactor feedwater pump and "B" condensate pump seal replacements – week of April 7
- "A" EDG planned maintenance – week of April 28

- Electrical bus 4 undervoltage relays planned maintenance, “A” reactor building closed-loop cooling water (RBCCW) pump planned maintenance, and “B” RBCCW pump emergent maintenance – week of May 26
- HPCI planned maintenance and surveillance testing – week of June 16

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 5 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- The electro-thermal link on the west switchgear room fan damper failed to melt during testing, condition report CR-VTY-2014-01105 initiated on March 19
- Electrical penetration was leaking nitrogen, losing pressure at approximately 3 to 4 pounds per square inch (psi) per day, condition report CR-VTY-2014-01341 initiated on April 4
- “D” RHRSW pump motor bearing oil cooler flow found low at 1.6 gallons per minute, condition report CR-VTY-2014-01351 initiated on April 4
- Electrical bus 13 voltage higher than specification, condition report CR-VTY-2014-01766 initiated on May 5
- Vertical and bench red light “open” indication found intermittent for “D” main steam line inboard isolation valve, condition report CR-VTY-2014-02055 initiated on May 31

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to Entergy’s evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Entergy. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)Temporary Modificationsa. Inspection Scope

The inspectors reviewed temporary modification, Engineering Change 50088, "Restore Alarm Function to Annunciator 9-4-C-6," to determine whether the modification affected the safety functions of systems that are important to safety. The inspectors reviewed the process applicability determination documentation and post-modification testing results, and conducted field walkdowns of the modification to verify that the temporary modification did not degrade the design bases, licensing bases, and performance capability of the affected systems.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 7 samples)a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- Residual heat removal loop "A" quarterly valve surveillance following planned maintenance on April 10
- Reactor protection system low reactor water level relay replacement on April 17
- AC-DP-5 transformer replacement on April 24
- "A" EDG jacket water hydro test following heat exchanger cleaning on April 30
- "A" EDG preventive maintenance on May 2
- Valve operator inspections on "A" core spray pump minimum flow valve and "A" core spray pump suction valve on June 3
- "A" EDG lube oil thermostat repair on June 24

b. Inspection Scope

No findings were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)a. Inspection Scope

The inspectors observed performance of surveillance tests and reviewed test data of selected risk-significant SSCs to assess whether test results satisfied technical specifications, the UFSAR, and Entergy's procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- Alternate shutdown battery AS-2 once per cycle service test on April 1
- John Deere diesel generator monthly surveillance on April 9
- Reactor core isolation cooling system surveillance on May 7
- Main steam isolation valve full closure timing quarterly surveillance on June 23
- Turbine generator valve quarterly performance testing on June 23
- Standby liquid control system quarterly surveillance on June 25

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06 – 1 sample)Emergency Preparedness Drill Observationa. Inspection Scope

The inspectors evaluated the conduct of a routine Entergy emergency drill on June 4 to identify any weaknesses and deficiencies in the classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the station drill critique to compare inspector observations with those identified by Entergy staff in order to evaluate Entergy's critique and to verify whether the staff was properly identifying weaknesses and entering them into the corrective action program.

b. Findings

No findings were identified.

## 2. RADIATION SAFETY

### Cornerstone: Occupational/Public Radiation Safety (PS)

#### 2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01 – 1 sample)

During the week of April 21 – 25, the inspectors reviewed and assessed Entergy's performance in assessing the radiological hazards in the workplace associated with licensed activities and the implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures. The inspectors verified that Entergy is properly identifying and reporting performance indicators (PIs) for the Occupational Radiation Safety Cornerstone and identifying those performance deficiencies that were reportable as a PI and which may have represented a substantial potential for overexposure of the worker. The inspectors used the requirements in 10 CFR 20, "Standards for Protection Against Radiation," Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas for Nuclear Plants," the technical specifications, and Entergy's procedures as criteria for determining compliance.

#### a. Inspection Scope

The inspectors reviewed VY's PIs for the Occupational Exposure Cornerstone for follow-up. No PI events occurred since the last inspection of this area. No audits of this area were performed since the last inspection.

#### Radiological Hazard Assessment

The inspectors determined if, since the last inspection, there were changes to plant operations that may have resulted in a significant new radiological hazard for onsite workers or members of the public. The inspectors determined that no such changes occurred.

The inspectors reviewed radiological surveys from selected plant areas. The inspectors verified that the thoroughness and frequency of the surveys were appropriate for the given radiological hazard. The inspectors conducted walk downs of the facility, including radioactive waste processing, storage, and handling areas, to evaluate material and radiological conditions.

The inspectors verified that appropriate pre-work surveys were performed which were appropriate to identify and quantify the radiological hazard and to establish adequate protective measures. The inspectors evaluated the radiological survey program to determine if hazards were properly identified, including the following:

- identification of hot particles
- presence of alpha emitters
- potential for airborne radioactive materials, including the potential presence of transuranics and/or other hard-to-detect radioactive materials
- hazards associated with work activities that could suddenly and severely increase radiological conditions
- severe radiation field dose gradients that can result in non-uniform exposures of the body

The inspectors selected air sample survey records and verified that samples were collected and counted in accordance with procedures. The inspectors observed work in potential airborne areas and verified that air samples were representative of the breathing air zone. The inspectors verified that Entergy has a program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

#### Instructions to Workers

The inspectors selected containers holding nonexempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers and verified that the containers were labeled and controlled.

The inspectors reviewed radiation work permits (RWPs) used to access high radiation areas (HRAs) and identified what work control instructions or control barriers were specified. The inspectors verified that allowable stay time or permissible dose for radiologically significant work under each RWP was clearly identified. The inspectors verified that electronic personal dosimeter (EPD) alarm set points were in conformance with survey indications and Entergy's policy. No EPD malfunctions occurred since the last inspection.

#### Contamination and Radioactive Material Control

The inspectors observed several locations where Entergy monitors potentially contaminated material leaving the radiologically controlled area and inspected the methods used for control, survey, and release from these locations. The inspectors verified that the radiation monitoring instrumentation had appropriate sensitivity for the types of radiation present. The inspectors reviewed Entergy's criteria for the survey and release of potentially contaminated material. The inspectors verified that there was guidance on how to respond to an alarm that indicated the presence of licensed radioactive material.

The inspectors reviewed Entergy's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters. The inspectors selected sealed sources from Entergy's inventory records that represented the greatest radiological risk. The inspectors verified that the sources were accounted for properly and verified intact. The inspectors verified that there were no transactions involving nationally tracked sources.

#### Radiological Hazards Control and Work Coverage

During tours of the facility and reviews of ongoing work, the inspectors evaluated ambient radiological conditions. The inspectors verified that existing conditions were consistent with posted surveys, RWPs, and worker briefings, as applicable. During job performance observations, the inspectors verified the adequacy of radiological controls, such as required surveys, radiation protection job coverage, and contamination controls. The inspectors evaluated Entergy's means of using EPDs in high noise areas as HRA monitoring devices.

The inspectors verified that radiation monitoring devices were placed on the individual's body consistent with the method that Entergy was employing to monitor dose from



external radiation sources. The inspectors verified that the dosimeter was placed in the location of highest expected dose or that Entergy was properly employing an NRC-approved method of determining effective dose equivalent. For high-radiation work areas with significant dose rate gradients (a factor of 5 or more), the inspectors reviewed the application of dosimetry to effectively monitor exposure to personnel. The inspectors verified that Entergy's controls were adequate.

The inspectors reviewed RWPs for work within airborne radioactivity areas with the potential for individual worker internal exposures. The inspectors evaluated airborne radioactive material controls and monitoring, including potential for significant airborne contamination. For these selected airborne radioactive material areas, the inspectors verified barrier integrity and temporary high-efficiency particulate air ventilation system operation.

The inspectors examined Entergy's physical and programmatic controls for highly activated or contaminated materials stored within the spent fuel pool. The inspectors verified that appropriate controls were in place to preclude inadvertent removal of these materials from the pool.

The inspectors conducted selective inspection of posting and physical controls for HRAs and very high radiation areas (VHRAs) to verify conformance with the Occupational PI.

#### Risk-Significant HRA and VHRA Controls

The inspectors discussed the controls and procedures for high-risk HRAs and VHRAs with the radiation protection manager. The inspectors verified that any changes to Entergy procedures did not substantially reduce the effectiveness and level of worker protection.

The inspectors discussed the controls in place for special areas that have the potential to become VHRAs during certain plant operations with first-line health physics supervisors. The inspectors verified that Entergy controls for all VHRAs, and areas with the potential to become a VHRA, ensured that an individual was not able to gain unauthorized access to the VHRA.

#### Radiation Worker Performance

During job performance observations, the inspectors observed radiation worker performance with respect to stated radiation protection work requirements. The inspectors determined that workers were aware of the significant radiological conditions in their workplace and the RWP controls/limits in place and that their performance reflected the level of radiological hazards present.

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspectors determined that there was no observable pattern traceable to a similar cause. The inspectors determined that this perspective matched the corrective action approach taken by Entergy to resolve the reported problems. The inspectors discussed with the radiation protection manager any problems with the corrective actions.

### Radiation Protection Technician Proficiency

During job performance observations, the inspectors observed the performance of the radiation protection technician with respect to radiation protection work requirements. The inspectors determined that technicians were aware of the radiological conditions in their workplace and the RWP controls/limits and that their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be radiation protection technician error. The inspectors determined that there was no observable pattern traceable to a similar cause. The inspectors determined that this perspective matched the corrective action approach taken by Entergy to resolve the reported problems.

### Problem Identification and Resolution

The inspectors verified that problems associated with radiation monitoring and exposure control were being identified by Entergy at an appropriate threshold and were properly addressed for resolution in Entergy's corrective action program. The inspectors verified the appropriateness of the corrective actions for a selected sample of problems documented by Entergy that involved radiation monitoring and exposure controls. The inspectors determined that Entergy was assessing the applicability of operating experience.

#### b. Findings

No findings were identified.

## **4. OTHER ACTIVITIES**

### 4OA1 Performance Indicator Verification (71151)

#### .1 Safety System Functional Failures (1 sample)

##### a. Inspection Scope

The inspectors sampled Entergy's submittals for the Safety System Functional Failures PI for the period of July 1, 2013, through March 31, 2014. To determine the accuracy of the PI data reported during those periods, the inspectors used definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73." The inspectors reviewed Entergy's operator narrative logs, operability assessments, maintenance rule records, condition reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

##### b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index (2 samples)

a. Inspection Scope

The inspectors reviewed Entergy's submittal of the Mitigating Systems Performance Index for the following systems for the period of July 1, 2013, through March 31, 2014:

- High Pressure Injection System
- Heat Removal System

To determine the accuracy of the PI data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02. The inspectors also reviewed Entergy's operator narrative logs, operating procedures, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 2 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Entergy entered issues into their corrective action program at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the corrective action program and periodically attended condition report review group meetings.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues to identify trends that might indicate the existence of more significant safety issues, as required by Inspection Procedure 71152, "Identification and Resolution of Problems." The inspectors reviewed the VY corrective action program database for the first and second quarters of 2014 to assess condition reports written in various subject areas (equipment problems, human performance issues), as well as individual issues identified during the NRC's daily condition report review (Section 4OA2.1).

b. Findings and Observations

No findings were identified.

Inspection Report 05000271/2013005 (ML14037A334) documented a potential emerging trend due to a reduction in the average daily rate of condition report initiation. For the six-month period from January 2014 to June 2014, the average daily rate remained steady. The rate is lower than the rate in 2012 and most of 2013 but similar to that in 2009, 2010, and 2011 (excluding refueling outage periods). Entergy performed a quantitative review of the decline in condition report initiation on a departmental basis, and correlated the decrease with results from resolving long-standing degraded conditions and other station improvements accomplished in 2013. The inspectors noted that the subsequent sustained lower initiation rate, as well as the lack of further decline, supported this argument. The inspectors reviewed the quantitative analysis and concluded the potential emerging trend was satisfactorily resolved.

.3 Annual Sample: Operating Equipment Issues

a. Inspection Scope

The inspectors conducted an evaluation of root cause analysis for condition reports CR-VTY-2014-00758 and CR-VTY-2013-05698 that Entergy performed due to reactor feedwater pump seal failures and reactor recirculation pump motor oil level alarms. The inspectors selected the sample based on operations trending of emergent issues.

The inspectors performed an in-depth review of the root cause evaluations and assessed the following attributes: identification of the root and contributing causes, extent of condition reviews, and previous occurrences. The inspectors also assessed the timeliness of corrective actions and whether they will preclude repetition of the events. The inspectors performed reviews of the documents noted in the Attachment to assess the effectiveness of the planned, scheduled, and completed corrective actions to resolve the identified deficiencies.

b. Findings and Observations

No findings were identified.

The inspectors determined that Entergy appropriately identified, characterized, and implemented corrective actions associated with the reactor feedwater pump seal failures and reactor recirculation pump motor oil level alarms.

#### 4OA5 Other Activities

##### Follow-up on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders (92702)

#### .1 Confirmatory Order EA-11-096

##### a. Inspection Scope

On August 24, 2011, the NRC issued a Confirmatory Order (EA-11-096) to Entergy Operations Inc., and Entergy Nuclear Operations, Inc. (collectively referred to as Entergy). The Confirmatory Order actions were agreed upon by Entergy and the NRC during an alternative dispute resolution session held on July 18, 2011, to resolve NRC concerns regarding an apparent violation of employee protection requirements at the River Bend Station. The actions focused on reorganizing the Quality Control reporting relationships, ensuring adequate training of 10 CFR 50.7, "Employee Protection," and performing an effectiveness review of the Employee Concerns Program (ECP) procedures at all Entergy facilities.

By letter dated August 23, 2012, Entergy notified the NRC of the actions that had been taken in response to the requirements imposed by the Confirmatory Order. Accordingly, during the week of April 29, 2013, NRC staff from the Office of Enforcement and Region IV performed an inspection at the River Bend Station to assess the specific actions identified in Entergy's response letter. NRC staff also verified implementation of the remaining actions required to satisfy the conditions set forth in the Confirmatory Order, for all Entergy sites. Subsequent to this inspection, NRC staff continued to interact with Entergy regarding the adequacy of the corrective and preventive actions related to the underlying discriminatory issue.

##### b. Findings and Observations

No findings were identified.

During the follow-up inspection, the NRC staff reviewed Entergy's ECP supervisory training and general employee training documents, the relevant "lessons learned" from the facts of this matter, and the fleet-wide written communication reinforcing Entergy's commitment to maintaining a safety conscious work environment.

The NRC staff also reviewed the General Employee Training and Supervisory Training modules. Based on these reviews, it was determined that these training modules adequately addressed employee protection and included insights from the underlying discriminatory matter. The NRC staff determined that the supervisory training module appeared complete and included case studies as well as the specific elements from the underlying §50.7 "Employee Protection," violation. However, it was noted that although employees receive General Employee Training on an annual basis, Entergy does not require supervisors to take employee protection refresher training on a recurring basis, as a means to reinforce these standards.

Additionally, NRC staff evaluated the results of Entergy's effectiveness review of ECP enhancements and the associated training that arose from the corrective actions taken

to address this matter. Based on the results of this evaluation it was determined that Entergy had performed the requisite reviews at each station including; examination of selected ECP Case Files, Records Retention, Concerned Individual Follow-Up, and ECP Coordinator Training. Within the areas examined, no findings were identified, and in general it was determined that Entergy had adequately performed the effectiveness review of ECP procedural enhancements and the ECP training related to this matter.

During the follow-up review of the Quality Control/Quality Assurance reporting relationship, it was determined that Entergy's response did not ensure that persons performing the quality assurance function of receipt inspection reported to a management level sufficient to maintain organizational freedom and independence from cost and schedule. Subsequent to the identification of this performance issue, which affected the implementation of the Quality Assurance program at all nine Entergy sites, the condition was entered into Entergy's corrective action program as condition report CR-HQN-2013-00466.

Following the identification of this issue, additional discussions were held between NRC and Entergy to clarify the intent of the settlement agreement and subsequent Confirmatory Order stemming from the earlier alternate dispute resolution mediation. As a result of these discussions, Entergy's Corporate Licensing organization developed a fleet reconciliation plan to modify Entergy's Quality Assurance Program Manual to require that individuals performing inspections in accordance with Quality Assurance Program Manual, Section B.12, "Inspection," functionally report to the associated manager responsible for Quality Assurance. As described in the corrective actions associated with condition report CR-HQN-2013-00466, the affected individuals were those requiring certification in accordance with Quality Assurance Program Manual, Table 1, Regulatory Commitments, Section G, Regulatory Guide 1.58, "Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel," Revision 1, dated September 1980. In addition to revising the applicable provisions in the Quality Assurance Program Manual, corrective actions were initiated to revise implementing procedures to reflect the change in reporting relationship during the performance of required inspections as well as providing training to the affected individuals. The NRC staff confirmed that the remaining conditions of the Confirmatory Order were adequately addressed.

Based on the above reviews, the NRC determined that Entergy properly implemented the conditions specified in the Confirmatory Order and the associated actions were adequately implemented.

.2 Cited Violation VIO 05000271/2013005-01

a. Inspection Scope

In accordance with Inspection Procedure 92702, "Follow-up on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders," the inspectors conducted a follow-up inspection of the Green cited violation documented in Inspection Report 05000271/2013005 (ML14037A334). The violation was identified due to Entergy's failure to promptly correct deficient flooding pathways designed to withstand a flood event. This violation was cited because Entergy failed to restore compliance at the

first opportunity within a reasonable period of time following the issuance of the finding and non-cited violation related to these flooding pathways documented in Inspection Report 05000271/2013003 (ML13224A068).

The inspectors reviewed the scope and depth of analysis performed in addressing the identified deficiency. The inspectors also reviewed Entergy's assessment of generic implications of the identified violation and evaluated the corrective actions implemented by Entergy personnel to determine whether they were adequate to address the identified deficiency and prevent recurrence. The inspectors reviewed Entergy's identified causes and actions taken to prevent recurrence. The inspectors interviewed Entergy personnel and reviewed inspection and installation work orders, design drawings, and engineering change documents associated with conduits interfacing with manholes in the switchgear rooms.

b. Findings and Observations

No findings were identified.

The inspectors concluded that Entergy installed and inspected required flood seals and established a formal flood seal program with a program owner within the engineering organization to monitor, maintain, and track conditions and changes associated with design basis flooding protection. The inspectors concluded that these actions were adequate to address the identified deficiency and prevent recurrence.

However, the inspectors identified that Entergy failed to consider one pathway via conduit into switchgear room manhole MH-S1 from an interior building location assumed to be flooded during a design basis flood. Therefore, Entergy failed to include this conduit in the flood seal program and failed to inspect features associated with this conduit. However, the inspectors determined that station design drawings documented an elastomer fire seal installed within the conduit located at the end within the switchgear room manhole MH-S1. In addition, the inspectors observed sealing material which would restrict water flow into the conduit on the opposite end exposed to design basis flooding. The inspectors determined that the issue was minor because it was related to protection against external factors and no equipment operability or functionality was significantly affected due to the physical configuration. In accordance with Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," this failure to comply with 10 CFR 50, Appendix B, Criterion III, "Design Control," constituted a violation of minor significance that is not subject to enforcement action in accordance with the Enforcement Policy. Entergy entered the inspectors' observations into their corrective action program as condition report CR-VTY-2014-02401.

4OA6 Meetings, Including Exit

On July 14, 2014, the inspectors presented the inspection results to Mr. Christopher Wamser, Site Vice President, and other members of the Entergy staff who acknowledged the inspection results. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

**ATTACHMENT: SUPPLEMENTARY INFORMATION**

Enclosure

**SUPPLEMENTARY INFORMATION**

**KEY POINTS OF CONTACT**

Vermont Yankee Personnel

C. Wamser, Site Vice President  
V. Fallacara, General Manager of Plant Operations  
M. Romeo, Director of Regulatory and Performance Improvement  
J. Boyle, Engineering Director  
R. Busick, Senior Operations Manager  
C. Chappell, Regulatory Assurance Manager  
P. Corbett, Nuclear Oversight Manager  
R. Felumb, Performance Improvement Manager  
V. Ferrizzi, Shift Manager  
B. Ford, Senior Manager Nuclear Safety and Licensing  
J. Hardy, Chemistry Manager  
E. Harms, Assistant Operations Manager  
M. Janus, Senior Maintenance Manager  
S. Lanning, Field Support Supervisor  
M. McKenney, Emergency Preparedness Manager  
S. Naeck, Senior Production Manager  
J. Rogers, Design Engineering Manager  
M. Rose, Design Engineer  
P. Ryan, Security Manager  
K. Stupak, Manager, Training and Development  
D. Tkatch, Radiation Protection Manager

**LIST OF ITEMS OPENED, CLOSED, DISCUSSED AND UPDATED**

Closed

05000271/2013005-01	VIO	Inadequate Corrective Actions to Restore Switchgear Room Flood Boundary (Section 4OA5)
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**LIST OF DOCUMENTS REVIEWED**

In addition to the documents identified in the body of this report, the inspectors reviewed the following documents and records.

Vermont Yankee Nuclear Power Station Updated Final Safety Analysis Report  
Vermont Yankee Nuclear Power Station Technical Specifications  
Vermont Yankee Nuclear Power Station Narrative Logs, Night Orders, and Standing Orders

**Section 1R01: Adverse Weather Protection**

Procedures

ARS 21006, "CRP 9-8 Alarm Response Sheets," Revision 18



ARS 21005, "CRP 9-7 Alarm Response Sheets," Revision 25  
OPOP-4KV-2142, "Electrical System," Revision 6  
OPOT-3122-02, "Station Blackout," Revision 4  
OPOP-PHEN-3127, "Natural Phenomena," Revision 15  
OPON-3179-01, "Grid Instability," Revision 1

Condition Reports

CR-VTY-2014-01290

Miscellaneous

EMMP-INSP-00216-22, "Weekly Yard Readings and Brush Inspections," Revision 4, completed  
6/3/14  
EC 50193, "Revise Calculation VYC-1458 and Suggest Necessary Procedure Changes to  
Ensure that the SBO Diesel Generator Remains within its Rating"  
OPOP-PREP-2196, Attachment 2, "Warm Weather Initiation Operations Checklist," completed  
6/11/14

**Section 1R04: Equipment Alignment**

Procedures

OPOP-RHR-2124, "Residual Heat Removal System," Revision 10  
OP 2120, "High Pressure Coolant Injection System," Revision 62  
OP 2123, "Core Spray," Revision 45

Condition Reports

CR-VTY-2014-01521

Drawings

G-141159, Sheet 1, "Flow Diagram Service Water System," Revision 89  
G-191169, Sheet 1, "Flow Diagram High Pressure Coolant Injection System," Revision 56  
G-191169, Sheet 2, "Flow Diagram High Pressure Coolant Injection System," Revision 45  
G-191168, "Flow Diagram Core Spray System," Revision 48

**Section 1R05: Fire Protection**

Procedures

OP 3020, "Fire Emergency Response Procedure," Revision 59

Pre-Fire Plans

FBPFP, "Fire Brigade Pre-Fire Plans Vermont Yankee Power Station," Revision 5

Miscellaneous

"Fire Hazards Analysis," Revision 14

**Section 1R06: Flood Protection Measures**

Condition Reports

CR-VTY-2014-01203  
CR-VTY-2014-01773

**Section 1R07A: Heat Sink Performance**

Calculations

VYC-2069, "Re-Evaluation of Standby Fuel Pool Cooling Heat Exchangers Design Basis,"  
Revision 0

Miscellaneous

Heat Exchanger Program Health Report 3Q 2013  
VYOPF 4179.02, "Standby FPCS Pump Operability and Discharge Check Valve Test Data  
Sheet," completed 3/5/14

**Section 1R11: Licensed Operator Regualification Program**

Procedures

OP 0105, "Reactor Operations," Revision 97  
OP 4113, "Main and Auxiliary Steam System Surveillance," Revision 35  
OP 4424, "Control Rod Scram Testing and Data Reduction," Revision 44  
ON 3143, "Stuck Control Rod," Revision 12

Condition Reports

CR-VTY-2014-01377  
CR-VTY-2014-01379

**Section 1R12: Maintenance Effectiveness**

Condition Reports

CR-VTY-1996-01053	CR-VTY-2013-04478	CR-VTY-2014-01399
CR-VTY-2012-01596	CR-VTY-2013-04704	
CR-VTY-2012-03007	CR-VTY-2013-06740	

Work Orders

WO 00331411, "P-7-1A: Measure SW Pump Shaft to Throttle Busing Clearance"  
WO 00311590, "C RHR Motor Heater Not Functioning Properly"  
WO 00321240, "V10-184 Leaking By"

Miscellaneous

NVY 13-096, "VYNPS-Relief Requests for Fifth 10-Year Inservice Testing Program Interval,"  
8/28/2013  
SEP-VTY-IST-001, "Vermont Yankee Nuclear Power Station Inservice Testing Program Plan –  
Fifth Ten Year Interval," Revision 1  
EC 47818, "Sleeveless Shaft for SW Pump P-7-1D"  
System Health Report – Service Water – 4Q13  
Residual Heat Removal State of the System Report, 4/30/2014  
System Health Report – Residual Heat Removal – 1Q14  
VYSE-MRL-2012-003, "Performance Evaluation for RHR Subsystem A," 8/21/2012

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Procedures

OPOP-ALTSD-3126, "Shutdown Using Alternate Shutdown Methods," Revision 6

OP 2146, "Operation of Station and Alternate Shutdown System 125-Volt Battery Chargers,"  
Revision 30  
EN-OP-119, "Protected Equipment Postings," Revision 6  
AP 0172, "Work Schedule Risk Management – Online," Revision 27  
EMSP-BATT-5276-10, "Alternate Shutdown AS-1 Battery Modified Performance Test,"  
Revision 2

Condition Reports

CR-VTY-2014-01429

Miscellaneous

VY-NE-11-00001, Appendix L, "Vermont Yankee Nuclear Power Station Probabilistic Safety  
Assessment Supporting Analyses," Revision 0  
125DC, "Design Basis Document for 125 Vdc Systems," Revision 23  
VYAPF 0172.02, "Risk Management Worksheet," completed 5/21/14  
EOOS Risk Assessment Tool  
Workweek 1421 System Schedule  
Workweek 1424 System Schedule

**Section 1R15: Operability Determinations and Functionality Assessments**

Procedures

OP 4115, "Primary Containment Surveillance," Revision 43  
EN-OP-104, Operability Determinations," Revision 7  
OPST-BLRT-4030, "Types B and C Primary Containment Leakage Rate Testing," Revision 1  
OP 4019, "Surveillance of Plant Fire Barriers and Fire Rated Assemblies," Revision 24  
OP 4019, "Surveillance of Plant Fire Barriers and Fire Rated Assemblies," Revision 31  
OPOP-4KV-2142, "4kV Electrical System," Revision 6  
OPOP-ALTSD-3126, "Shutdown Using Alternate Shutdown Methods," Revision 6  
EN-MA-125, "Trouble Shooting Control of Maintenance Activities," Revision 7

Condition Reports

CR-VTY-2005-01011	CR-VTY-2014-01105	CR-VTY-2014-01664
CR-VTY-2005-03201	CR-VTY-2014-01351	CR-VTY-2014-01732
CR-VTY-2007-01502	CR-VTY-2014-01411	CR-VTY-2014-01766
CR-VTY-2013-06219	CR-VTY-2014-01413	CR-VTY-2014-02055
CR-VTY-2013-06594	CR-VTY-2014-01662	

Work Orders

WO 52375057, Task 10, "FPD-115-10, Inspect/Test Fire Damper per OP 4019.02"  
WO 51077366, "Inspect "C" Series Dampers per OP 4019.02"  
WO 00130398, "Test ETL's in Stock"

Drawings

5920-11918, Sheet 3, "RK-16-2-3 Rack Detail," Revision 0

Calculations

VYC-1512, "Station Blackout Voltage Drop and Short Circuit Study," Revision 2  
VYC-1458, "Station Blackout Load Capacity Analysis," Revision 0, MCC 1

Miscellaneous

EGST-4031, "Types B and C Containment Leakage Rate Calculations and Evaluations,"  
Revision 2  
WR 336203, "Electrical Penetration Leakage Approximately 3-4 PSI per Day"  
WR 335523, "Determine Circuit Continuity for Fire Damper ETL's"  
NFPA 80, "Standard for Fire Doors and Other Opening Protectives," 2013  
EN-MS-S-043-V, "Engineering Input for Immediate Operability Determinations and Risk  
Assessments," Revision 5  
"Fire Hazards Analysis," Revision 14  
ANSI C84.1, "American National Standard for Electric Power Systems and Equipment," 1989  
VYE 99/032, "No Load Voltage for Vernon Tie Line," March 19, 1999  
EC 50516, "Address Hi Volt Limit Reference CR-VTY-2014-1226"  
MS, "Main Steam System Design Basis Document," Revision 20  
RPS, "Reactor Protection System Design Basis Document," Revision 17  
SEP-VTY-IST-001, "Vermont Yankee Nuclear Power Station Inservice Testing Program Plan –  
Fifth Ten Year Interval," Revision 1  
BVY-96-033, "NUREG-0737, Supplement No. 1 – Regulatory Guide 1.97 Program Update,"  
3/29/96  
RG1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and  
Environs Conditions During and Following an Accident," Revision 3

**Section 1R18: Plant Modifications**

Procedures

VTY-EN-DC-136, "Temporary Modifications," Revision 10

Condition Reports

CR-VTY-2014-01259  
CR-VTY-2014-01260  
CR-VTY-2014-01439

Work Orders

WO 378868, Task 3, "Install Interposing Relay 9-4-C-6 IAW Temporary Modification EC-50088"

Miscellaneous

EC 50088, "Restore Alarm Function to Annunciator 9-4-C-6"  
EN-MA-125, Attachment 9.3, "Troubleshooting Control Form," completed 3/31

**Section 1R19: Post-Maintenance Testing**

Procedures

OPST-RHR-4124-08A, "RHR LPCI Loop A Venting (Quarterly)," Revision 1  
OPST-RHR-4124-09A, "RHR Loop "A" Valve Operability Test," Revision 3  
OPST-EDG-4126-03A, "6 Month "A" EDG Fast Start Operability Test," Revision 5  
EGNE-8064, "Non-Code Visual Examination Methods as Good Maintenance Practice,"  
Revision 0  
OPST-CS-4123-02A, "Core Spray "A" MOV/Injection Check Valve Closure Operability Test,"  
Revision 4, completed 6/3/14  
OP 5220, "Limitorque Operator PM," Revision 34  
ICST-4313-01, "Reactor Water Lo Level Scram – Isolation/Lo-Lo Level Isolation  
Functional/Calibration," Revision 4

Condition Reports

CR-VTY-2012-03561  
CR-VTY-2014-01440

CR-VTY-2014-01399  
CR-VTY-2014-01577

CR-VTY-2014-2365  
CR-VTY-2014-2437

Work Orders

WO 52391063, "2-3-57B(x); Replace Relay"  
WO 52391064, "2-3-57B(x1); Replace Relay"  
WO 52391065, "2-3-57B(x2); Replace Relay"  
WO 00370646, "T-AC-DP-5; Replace Transformer"  
WO 52522852, "OPST-RHR-4124 (Q) "A" Loop RHR/RHRSW Pump & Valve Open Tests"  
WO 00381554, "Air Leak on Unloader Valves; C-3-1A"  
WO 52437736, "Drain/Hydro Diesel Generator Jacket Cooling System DG-1-1A"  
WO 52437741, "Clean/Hydrolaze DG-1-1A Heat Exchanger"  
WO 52422895, "V14-5A; OP 5220 Routine Inspection of Limitorque Operator"  
WO 52422894, "V14-7A; OP 5220 Routine Inspection of Limitorque Operator"  
WO 00386571, "TS-24-OHT-1A; Adjust to Lower Crank Case Oil Temperature"  
WO 00386580, "Replacement of TS-24-OHT-1A"

Drawings

DWG 5920-04150, "Emergency Diesel Generator Lube Oil System Schematic A & B,"  
Revision 10

Data Sheets

OPST-RHR-4124-08A, "RHR LPCI Loop A Venting (Quarterly)," completed 4/10/14  
OPST-RHR-4124-09A, "RHR Loop A Valve Operability Test," completed 4/10/14  
OPST-RHR-4124-09A, "RHR Loop A Valve Operability Test," completed 4/17/14  
OPST-EDG-4126-03A, completed 5/2/14

Miscellaneous

EC 48484, "Replace T-AC-DP-5"  
VR-351021721-1, "Dedication Report for Three Phase Transformer," Revision 1  
NVY 99004, "Tech Spec Amendment 165 Re: Primary Isolation Valves (PCIs)"  
SEP-VTY-IST-001, "Vermont Yankee Inservice Testing (IST) Program Section," Revision 1  
EN-FAP-WM-002, Attachment 7.4, "Critical Evolutions Meeting Presentation Format"

**Section 1R22: Surveillance Testing**Procedures

OP 2127, "John Deere Diesel Generator System," Revision 23  
OP 4127, "John Deere Diesel Generator Surveillance," Revision 24  
OP 4113, "Main and Auxiliary Steam System Surveillance," Revision 37  
OP 4160, "Turbine Generator Surveillance," Revision 58  
OP 4217, "Alternate Shutdown Battery AS-2," Revision 18  
OPST-RCIC-4121, "Reactor Core Isolation Cooling System Surveillance," Revision 5  
OP 4114, "Standby Liquid Control System Surveillance," Revision 75

Condition Reports

CR-VTY-2014-01417  
CR-VTY-2014-01418

CR-VTY-2014-01419  
CR-VTY-2014-01786

Work Orders

WO 52521689, "B-AS-2; Quarterly Battery Surveillance IAW EMST-BATT-4210-02"  
WO 52429130, "B-AS-2 Alternate Shutdown Battery Service Test"

Data Sheets

OP 4217, "Alternate Shutdown Battery AS-2," completed 4/12/14  
VYAPF 0211.02, "Rotating Equipment Vibration Data Sheet," completed 5/7/14  
OPST-RCIC-4121, Attachment 2, "RCIC Pump Operability Test Checklist," completed 5/7/14  
VYOPF 4114.01, "SLC Pump Operability and Discharge Check Valve Test Data Sheet,"  
completed 6/25/14

Miscellaneous

VY-NE-11-0001, Appendix E, "Vermont Yankee Nuclear Power Station Probabilistic Risk Assessment"  
IEEE Std. 450, "Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," 1987  
IEEE Std. 484, "Recommended Practice for Installation Design and Installation of Large Lead Storage Batteries for Generating Stations and Substations," 1987  
SEP-VTY-IST-001, "Vermont Yankee Nuclear Power Station Inservice Testing Program Plan – Fifth Ten Year Interval," Revision 1

**Section 1EP6: Drill Evaluation**

Procedures

AP 3125, "Vermont Yankee Nuclear Station EAL Classification Matrix," Revision 23  
EN-EP-308, "Emergency Planning Critiques," Revision 2

Miscellaneous

NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7

**Section 2RS1: Radiological Hazard Assessment and Exposure Controls**

Procedures

EN-RP-108, "Radiation Protection Posting," Revision 13  
EN-RP-101, "Access Control for Radiologically Controlled Areas," Revision 8  
EN-RP-143, "Source Control," Revision 9  
EN-RP-121, "Radioactive Material Control," Revision 7

Condition Reports

CR-VTY-2014-01549

**Section 4OA1: Performance Indicator Verification**

Procedures

OP 4360, "HPCI System Actuation Logic Functional Test," Revision 36  
OPST-HPCI-4129-02, "HPCI Pump Operability Test (Quarterly)," Revision 4  
OPST-HPCI-4120-04, "HPCI Valve Operability Test (Quarterly)," Revision 2  
VTY-EN-LI-114, "Performance Indicator Process," Revision 6  
OPST-RCIC-4121, "Reactor Core Isolation Cooling System Surveillance," Revision 5

Condition Reports  
CR-VTY-2013-05607

Miscellaneous  
"Report of MRFF Events," 6/30/2013 – 4/1/2014

### **Section 40A2: Problem Identification and Resolution**

Procedures  
EN-LI-121-01, "Trend Codes," Revision 6

#### Condition Reports

CR-VTY-2011-05223	CR-VTY-2014-01520	CR-VTY-2014-01753
CR-VTY-2013-03141	CR-VTY-2014-01521	CR-VTY-2014-01766
CR-VTY-2013-05698	CR-VTY-2014-01540	CR-VTY-2014-01773
CR-VTY-2013-05749	CR-VTY-2014-01549	CR-VTY-2014-01786
CR-VTY-2013-06143	CR-VTY-2014-01560	CR-VTY-2014-01787
CR-VTY-2013-06537	CR-VTY-2014-01571	CR-VTY-2014-01828
CR-VTY-2014-00582	CR-VTY-2014-01577	CR-VTY-2014-01864
CR-VTY-2014-00758	CR-VTY-2014-01580	CR-VTY-2014-01877
CR-VTY-2014-01313	CR-VTY-2014-01584	CR-VTY-2014-01887
CR-VTY-2014-01341	CR-VTY-2014-01602	CR-VTY-2014-01888
CR-VTY-2014-01351	CR-VTY-2014-01605	CR-VTY-2014-01894
CR-VTY-2014-01357	CR-VTY-2014-01617	CR-VTY-2014-02079
CR-VTY-2014-01358	CR-VTY-2014-01620	CR-VTY-2014-02175
CR-VTY-2014-01379	CR-VTY-2014-01623	CR-VTY-2014-02198
CR-VTY-2014-01390	CR-VTY-2014-01629	CR-VTY-2014-02199
CR-VTY-2014-01399	CR-VTY-2014-01630	CR-VTY-2014-02234
CR-VTY-2014-01411	CR-VTY-2014-01642	CR-VTY-2014-02271
CR-VTY-2014-01413	CR-VTY-2014-01643	CR-VTY-2014-02272
CR-VTY-2014-01418	CR-VTY-2014-01660	CR-VTY-2014-02278
CR-VTY-2014-01428	CR-VTY-2014-01661	CR-VTY-2014-02284
CR-VTY-2014-01429	CR-VTY-2014-01662	CR-VTY-2014-02285
CR-VTY-2014-01439	CR-VTY-2014-01664	CR-VTY-2014-02343
CR-VTY-2014-01440	CR-VTY-2014-01675	CR-VTY-2014-02365
CR-VTY-2014-01449	CR-VTY-2014-01689	CR-VTY-2014-02437
CR-VTY-2014-01453	CR-VTY-2014-01693	CR-VTY-2014-02453
CR-VTY-2014-01455	CR-VTY-2014-01710	CR-VTY-2014-02454
CR-VTY-2014-01459	CR-VTY-2014-01720	
CR-VTY-2014-01496	CR-VTY-2014-01748	

Miscellaneous  
Vermont Yankee APRM Report, 1Q14  
EXTRA Trend Code Data Charts  
Paperless Condition Reporting System Database

### **Section 40A5: Other Activities**

Procedures  
EN-MP-120, "Material Receipt," Revision 7  
EN-MP-138, "Commercial Grade Dedication Lab Conduct of Operation," Revision 2

EN-QV-100, "Conduct of Nuclear Oversight," Revision 9  
EN-QV-111, "Training and Certification of Inspection Verification and Examination Personnel,"  
Revision 13  
OP 0046, "Installation and Repair of Fire Barriers, Penetration Seals, Fire Breaks and Flood  
Seals," Revision 16  
OPOP-PHEN-3127, "Natural Phenomena," Revision 15

Condition Reports

CR-HQN-2011-00979	CR-VTY-2013-06330	CR-VTY-2014-02401
CR-HQN-2013-00466	CR-VTY-2014-02357	

Work Orders

WO 00343546, "MH-P3; Replace Screw Type Flood Seals with Sylguard"  
WO 00345823, "HH-24(SI); Replace Screw Type Flood Seal with Sylguard"  
WO 00345826, "HH-26(SII); Replace Screw Type Flood Seal with Sylguard"  
WO 03-004854-01, "Reseal Flood Seals in Manhole MH-P3, Cond 44055 & 1325A"  
WO 00322365, "Install Sylguard Seal in 4" Spare Conduit per OP 0046"  
WO 00343222, "MH-P4; Replace Screw Type Flood Seal with Sylguard"  
WO 52416809, "(SA) Manhole, Handhole Conduit Flood Seals Inspection"  
WO 52518486, "(SA) Manhole, Handhole Conduit Flood Seals Inspections"  
WO 369610, "Inspect Conduit Flood Seals for Extent of Condition"

Drawings

G-191384, Sheet 6, "Electrical Manhole Details," Revision 9  
G-191384, Sheet 5, "Electrical Manhole Details," Revision 11  
G-191384, Sheet 3, "Electrical Manhole Details," Revision 12  
G-191384, Sheet 7, "Electrical Manhole Details," Revision 9  
G-191373, Sheet 2, "Outlying Area Conduit & Grounding," Revision 1  
G-191326, Sheet 1, "Admin/Service Bldg Conduit and Grounding" Revision 24  
G-191310, Sheet 1, "Turbine Generator Bldg Ground Floor Conduit, Trays and Grounding Sh. 1,"  
Revision 28  
G-191305, Sheet 1, "Transformer Yard Conduit and Grounding Plan," Revision 1  
G-191325, "Switchgear Room Conduit and Grounding," Revision 24

Miscellaneous

LO-VTYLO-2013-00119  
EXEV, "Design Basis Document for External Events," Revision 2  
Entergy Nuclear Lesson Plan FCBT-GET-PATSS, Revision 16  
Synergy Nuclear Safety Culture Assessment, Entergy Nuclear, Attachment, River Bend,  
August 1, 2012  
Synergy Nuclear Safety Culture Assessment, Entergy Nuclear, Attachment J, River Bend,  
June 2009  
Synergy Nuclear Safety Culture Assessment, Entergy Nuclear, Attachment J, River Bend,  
March 2006  
Entergy Nuclear Safety Culture Assessment 2012 Survey, April 30, 2013  
Nuclear Safety Culture Assessment, Entergy Nuclear, Attachment L, River Bend, February 2012  
Nuclear Safety Culture Assessment, Entergy Nuclear, Attachment I, River Bend, August 1, 2012  
Entergy Quality Assurance Program Manual, Revision 25



**LIST OF ACRONYMS**

10 CFR	Title 10 <i>Code of Federal Regulations</i>
AC	alternating current
DRS	[NRC] Division of Reactor Safety
ECP	employee concerns program
EDG	emergency diesel generator
EPD	electronic personal dosimeter
HPCI	high pressure coolant injection system
HRA	high radiation area
NRC	Nuclear Regulatory Commission
PI	Performance Indicator
PSI	pounds per square inch
RBCCW	reactor building closed cooling water
RHRSW	heat removal service water
RWP	radiation work permit
SSC	structures, systems and components
UFSAR	Updated Final Safety Analysis Report
VHRA	very high radiation area
VY	Vermont Yankee Nuclear Power Station