



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I**
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

October 31, 2012

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 05000271/2012004**

Dear Mr. Wamser:

On September 30, 2012 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 October 15, 2012, with Mr. Michael Gosekamp 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.

This report documents one NRC-identified finding and one self-revealing finding of very low safety significance (Green). One of these findings was determined to involve a violation of NRC requirements. However, because of the very low safety significance, and because the issue has been entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV), consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at Vermont Yankee. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Senior Resident Inspector at Vermont Yankee.

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

Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Ronald R. Bellamy, Chief
Reactor Projects Branch 5
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000271/2012004
w/ Attachment: Supplementary Information

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C. Wamser

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-271

License No.: DPR-28

Report No.: 05000271/2012004

Licensee: Entergy Nuclear Operations, Inc.

Facility: Vermont Yankee Nuclear Power Station

Location: Vernon, Vermont 05354-9766

Dates: July 1, 2012 through September 30, 2012

Inspectors: S. Rutenkroger, PhD, Senior Resident Inspector, Division of Reactor
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Approved by: Ronald R. Bellamy, PhD, Chief
Reactor Projects Branch 5
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SUMMARY OF FINDINGS

IR 05000271/2012004; 07/01/2012 – 09/30/2012; Vermont Yankee Nuclear Power Station; Maintenance Effectiveness, Surveillance Testing.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. One NRC-identified finding and one self-revealing finding of very low safety significance (Green) were identified, one of which was determined to be a non-cited violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspects for the findings were determined using IMC 0310, "Components Within Cross-Cutting Areas." Findings for which the SDP does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Initiating Events

- Green. A self-revealing, Green finding (FIN) was identified because Entergy failed to implement a preventive maintenance procedure. Specifically, Entergy personnel classified the discovery status code for the minor motor inspection on the "A" recirculation pump motor generator set drive motor incorrectly, as "B – satisfactory or normal wear," instead of "D – abnormal wear," which resulted in a missed opportunity to replace degraded components that caused the "A" recirculation pump to trip and an unplanned entry into single recirculation loop operation. Entergy's corrective actions included cleaning the motor and the junction box, replacing components that had been damaged by an arc flash, and testing the circuit to verify no other components were degraded prior to restarting the motor. In addition, Entergy initiated condition report CR-VTY-2012-02811 and issued a corrective action to reinforce the requirements of Entergy Procedure EN-DC-324 among maintenance staff. Entergy also plans to add all large motor and generator junction boxes to the predictive maintenance program and to perform thermography on a six month frequency.

The inspectors determined that the issue was more than minor because it resulted in a transient, i.e. an event that upset plant stability (an unplanned entry into single recirculation loop operation). In particular, the issue is associated with the Equipment Performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability during power operations. The inspectors determined the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." The finding was determined to be of very low safety significance (Green) because the finding was a transient initiator that did not cause a reactor trip. The inspectors determined that the finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because Entergy did not sufficiently define and effectively communicate expectations regarding procedural compliance for the selecting of the discovery status code and personnel did not follow procedures. [H.4(b)]. (Section 1R12)

Cornerstone: Barrier Integrity

- Green. The inspectors identified an NCV of technical specification (TS) 6.4, "Procedures," for Entergy's failure to implement a surveillance activity in accordance with the written procedure. Specifically, the inspectors identified that during a surveillance test, dedicated operators required to maintain operability of primary containment left the immediate vicinity of open manual containment isolation valves. Entergy's corrective actions included restoring the administrative controls required to maintain primary containment operability during the subject surveillance test, initiating condition report CR-VTY-2012-03561, sending a memorandum to and discussing the issue with all operating crew shift managers explaining the error and the requirements of a dedicated operator, and issuing a temporary night order further explaining these requirements. Additional corrective actions included implementing and tracking training for all operators on these requirements, and revising licensed operator training on primary containment to specifically describe these requirements.

The inspectors determined that the issue was more than minor because it is associated with the Human Performance attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the dedicated operators were required to be stationed in the immediate vicinity of the valve controls to rapidly close the valves when primary containment isolation is required during accident conditions, but the operators were significantly beyond the required immediate vicinity when they left the reactor building. The inspectors determined the significance of the finding using IMC 0609, Appendix H, "Containment Integrity Significance Determination Process." The finding was determined to be of very low safety significance (Green) using Appendix H, Table 6.2, "Phase 2 Risk Significance – Type B Findings at Full Power," because primary containment was inoperable for 37 minutes, i.e. less than 3 days. The inspectors determined that this finding had a cross-cutting aspect in the Human Performance cross-cutting area, Resources component, because the training of personnel did not describe specific requirements of dedicated operators, including the definition of immediate vicinity. [H.2(b)]. (Section 1R22)

REPORT DETAILS

Summary of Plant Status

Vermont Yankee Nuclear Power Station (VY) began the inspection period operating at 100 percent power. On July 6, operators reduced power to 74 percent for a control rod pattern adjustment and returned VY to 100 percent power the same day. On July 30, operators reduced power to 55 percent for a control rod pattern adjustment and returned VY to 100 percent power the following day. On August 1, operators reduced power to 79 percent for a control rod pattern adjustment and returned VY to 100 percent power the following day. The plant remained 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 reactor building, reactor water cleanup, and service water. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), TS, control room logs, and the corrective action program to determine what temperatures or other seasonal weather 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. 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 Impending Adverse Weather

a. Inspection Scope

On July 26, the inspectors reviewed Entergy's procedures and preparations following issuance of a Tornado Watch by the National Weather Service for the local area. The inspectors reviewed adverse weather information contained in the External Event Procedure Design Basis Document and UFSAR, and compared it to the actions specified in OPOP-PHEN-3127, "Natural Phenomenon," Revision 8. The inspectors also performed a walkdown of the protected area and the areas near the switchyard to verify items were tied down or stored so they would not be affected by high winds.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdowns (71111.04Q – 3 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- High pressure coolant injection during reactor core isolation cooling system maintenance on August 7
- “B” emergency diesel generator during “A” emergency diesel generator surveillance testing on September 4
- 4 kiloVolt (kV) alternating current system (buses one through four and Vernon Tie) during “B” emergency diesel generator surveillance testing on September 10

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 UFSAR, TS, 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.

.2 Full System Walkdown (71111.04S – 1 sample)

a. Inspection Scope

The inspectors performed a complete system walkdown of accessible, safety-related portions of the service water system to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, drawings, equipment line-up check-off lists, recent condition reports, the system health report and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors also reviewed electrical power availability, component lubrication, hangar and support functionality, and operability of support systems. The inspectors performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment

to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related condition reports to ensure Entergy appropriately evaluated and resolved any deficiencies. The inspectors discussed the system's condition with the system engineer.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Resident 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, in accordance with procedures.

- Turbine building feedwater pump room, on August 16
- Turbine building turbine lube oil tank and storage room, on August 16
- Intake structure service water pump room, on September 11
- Fuel oil storage tank and transfer pump house, on September 11
- Control room, on September 28

b. Findings

No findings were identified.

1R07 Heat Sink Performance (711111.07A – 2 samples)

a. Inspection Scope

The inspectors reviewed the "A" residual heat removal heat exchanger and the "B" emergency diesel generator jacket water heat exchanger to determine their readiness and availability to perform their safety functions. The inspectors reviewed the design basis for both components and verified Entergy's commitments to NRC Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." The inspectors reviewed the results of previous inspections of the heat exchangers. The inspectors discussed the results of the most recent inspections with engineering staff and reviewed pictures of the as-found and as-left conditions. The inspectors verified that Entergy initiated appropriate corrective actions for identified deficiencies. The inspectors also verified that the number of tubes plugged within the heat exchangers did not exceed the maximum amount allowed.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Biennial Inspection (71111.11B – 1 sample)

a. Inspection Scope

The inspectors performed the following inspection activities using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and Inspection Procedure Attachment 71111.11, "Licensed Operator Requalification Program and Licensed Operator Performance."

Examination Results

The inspectors reviewed the requalification exam results (operating test) for 2012 to determine whether pass/fail rates were consistent with the guidance of IMC 0609, Appendix I, "Operator Requalification Human Performance SDP." The inspectors verified that:

- Individual pass rate on the dynamic simulator scenarios was greater than 80 percent. (Pass rate was 97.6 percent)
- Individual pass rate on the job performance measures of the operating exam was greater than 80 percent. (Pass rate was 100 percent)
- Individual pass rate on the written examination was greater than 80 percent. This result is not applicable, because there was no written examination this year.
- More than 80 percent of the individuals passed all portions of the requalification exam. (Pass rate was 97.6 percent)
- Crew pass rate was greater than 80 percent. (Pass rate was 100 percent)

Written Examination Quality

The inspectors reviewed a sample of comprehensive written exams that facility staff previously administered to the operators in June and July 2011.

Operating Test Quality

The inspectors reviewed operating tests (scenarios and job performance measures) associated with three different examination weeks.

Licensee Administration of Operating Tests

The inspectors observed facility training staff administering dynamic simulator exams and job performance measures during the week of July 23. These observations included facility evaluations of crew and individual operator performance during the simulator exams and individual performance of job performance measures.

Exam Security

The inspectors assessed whether facility staff properly safeguarded exam material, and whether test item repetition was excessive.

Remedial Training and Re-examinations

The inspectors did not evaluate this area since no operators had failed an exam (operating test or comprehensive written exam) during the most recent 2 year requalification training cycle.

Conformance with License Conditions

The inspectors reviewed license reactivation records to ensure that 10 CFR 55.53, "Conditions of Licenses," and applicable program requirements were met. The inspectors also reviewed a sample of records for requalification training attendance, and a sample of medical examinations for compliance with license conditions and NRC regulations.

Simulator Performance

The inspectors reviewed simulator performance and fidelity for conformance to the reference plant control room. The inspectors also reviewed a sample of simulator deficiency reports to ensure facility staff addressed identified modeling problems.

Problem Identification and Resolution

The inspectors reviewed recent operating history documentation found in inspection reports, licensee event reports, Entergy's corrective action program, and the most recent NRC plant issues matrix. The inspectors also reviewed specific events from Entergy's corrective action program that indicated possible training deficiencies to verify that training had been appropriately addressed.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operators' Regualification Testing and Training (71111.11Q – 1 sample)

a. Inspection Scope

The inspectors observed licensed operator simulator training on August 20, which included a small break loss of coolant accident followed by a loss of the condensate and

feedwater systems coincident with a failure of control rods to fully insert. 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 shift technical advisor and the TS action statements entered. 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.

.3 Quarterly Review of Licensed Operator Performance in the Main Control Room (71111.11Q – 1 sample)

a. Inspection Scope

The inspectors observed control room operators during a high pressure coolant injection pump surveillance on September 20, including lining up the residual heat removal system in torus cooling mode to prepare for the surveillance. The inspectors observed the pre-job briefings 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 (71111.12 – 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 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and verified that the paragraph (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.

- Condensate system
- “A” recirculation pump motor generator set

b. Findings

Introduction. A self-revealing, Green, FIN was identified because Entergy failed to implement a preventive maintenance procedure. Specifically, Entergy personnel classified the discovery status code for the minor motor inspection on the “A” recirculation pump motor generator set drive motor incorrectly, as “B – satisfactory or normal wear,” instead of “D – abnormal wear,” which resulted in a missed opportunity to replace degraded components that caused the “A” recirculation pump to trip and an unplanned entry into single recirculation loop operation.

Description. During refueling outage 29 in October 2011, Entergy staff performed a minor motor inspection on the “A” recirculation pump motor generator set drive motor. Entergy personnel observed overheating and oxidation on the neutral bus bar (located adjacent to the T6 motor-lead-to-crimped-lug connection), replaced the bus bar, and wrote a condition report. When closing the work order for the preventive maintenance task, the staff chose to grade the condition of the drive motor as “B – satisfactory or normal wear.” However, Entergy procedure EN-DC-324, “Preventive Maintenance Program,” specified that if replacement parts were used that were not required by the preventive maintenance task, the condition should be classified as “D – abnormal wear.” An abnormal wear condition would have prompted an engineering review for additional necessary maintenance which would likely have identified the need to replace affected components adjacent to the overheated bus bar, such as the T6 motor-lead-to-crimped-lug connection.

On June 18, an arc flash occurred inside the drive motor junction box of the “A” recirculation pump motor generator set. The electrical transient caused the motor generator set and recirculation pump to trip. The reduction in core flow consequently reduced reactor power from 100 percent to approximately 67 percent. By procedure, control room operators then inserted control rods to further reduce power to 45 percent to stabilize the plant in single recirculation loop operation. Entergy staff determined the most probable cause of the arc flash was overheating on the T6 connection inside the motor junction box.

Entergy’s corrective actions included cleaning the motor and the junction box, replacing components that had been damaged by the arc flash, and testing the circuit to verify no other components were degraded prior to restarting the motor. In addition, Entergy initiated CR-VTY-2012-02811 and issued a corrective action to reinforce the requirements of EN-DC-324 among maintenance staff. Entergy also plans to add all large motor and generator junction boxes to the predictive maintenance program and to perform thermography on a six month frequency.

Analysis: The inspectors determined that Entergy personnel’s incorrect grading of the “A” recirculation pump motor generator set drive motor condition was a performance deficiency that was reasonably within Entergy’s ability to foresee and correct and should have been prevented. Traditional enforcement does not apply since there were no actual safety consequences, impacts on the NRC’s ability to perform its regulatory function, or willful aspects to the finding.

The inspectors reviewed IMC 0612, Appendix E, “Examples of Minor Issues, and found that there were no sufficiently similar examples to the issue. The inspectors determined that the issue was more than minor because it resulted in a transient, i.e. an event that upset plant stability (an unplanned entry into single recirculation loop operation). In particular, the issue is associated with the Equipment Performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability during power operations. The inspectors determined the significance of the finding using IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power.” The finding was determined to be of very low safety significance (Green) because the finding was a transient initiator that did not cause a reactor trip.

The inspectors determined that the finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because Entergy did not sufficiently define and effectively communicate expectations regarding procedural compliance for the selecting of the discovery status code and personnel did not follow procedures. [H.4(b)]

Enforcement: This finding does not involve enforcement action because no regulatory requirement violation was identified. Because this finding does not involve a violation and is of very low safety significance, it is identified as a finding. **FIN 05000271/2012004-01, Incorrect Assessment of Equipment Condition Resulted in Single Recirculation Loop Operation.**

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 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. 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 TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- “B” emergency diesel generator monthly surveillance and “B” residual heat removal quarterly surveillance – workweek(WW) 1229
- “A” service water pump and “B” control rod drive pump emergent maintenance – WW 1234
- High pressure coolant injection system instrumentation testing – WW 1235
- “B” emergency diesel generator semi-annual surveillance, “B” standby liquid control maintenance, and “A” service water pump maintenance – WW 1237

- High pressure coolant injection pump quarterly surveillance and “B” core spray maintenance – WW 1238

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 4 samples)

a. Inspection Scope

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

- Weeping from weld on the upstream side of the service water isolation valve for the motor cooling of the “A” and “C” residual heat removal service water pumps, condition report initiated on July 25
- Teflon sealed ball valves for isolating flush taps on the residual heat removal service water to residual heat removal emergency fill line were not qualified for the potential lifetime and accident radiation dose, condition report initiated on August 9
- “A” service water pump had potential indication of throttle bushing degradation, condition report initiated on August 23
- “A” startup transformer nitrogen pressure gauge failed low, condition report initiated on September 6

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 TS 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 TS and UFSAR to Entergy’s evaluations to determine whether the components or systems were operable. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 2 samples)

a. Inspection Scope

The inspectors evaluated a modification to the steam supply line drain piping of the reactor core isolation cooling system. The inspectors verified that the design bases, licensing bases, and performance capability of the reactor core isolation cooling system was not degraded by the modification to replace the inverted bucket steam trap and check valve with a thermostatic steam trap. The inspectors reviewed modification documents associated with the design change, the implementing work order and the post modification test procedure to verify that the modification could be performed on

line without impact to plant safety. The inspectors also interviewed engineering and maintenance personnel involved with the modification.

The inspectors evaluated a temporary leak repair on the motor bearing cooling line to the "A" and "C" residual heat removal service water pumps. The line had a pinhole leak caused by microbiologically induced corrosion that was upstream of the associated isolation valve. Since the location was unable to be characterized by ultrasonic examination, the leak rendered the residual heat removal service water pumps inoperable. Entergy installed a temporary clamp to ensure the structural integrity of the cooling line, stop the leak, and restore the operability of the pumps. The inspectors verified that the installed clamp complied with the design bases and licensing bases and the performance capability of the residual heat removal service water system was not degraded. The inspectors reviewed modification documents associated with the temporary leak repair, the implementing work order, and the post-repair visual inspection requirements to verify that the temporary leak repair had no impact on plant safety. The inspectors also interviewed engineering, operations, and chemistry personnel involved with the modification.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 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.

- "A" reactor building closed cooling water heat exchanger planned cleaning and maintenance on July 23
- Reactor core isolation cooling pump discharge flow controller replacement on August 7
- Reactor core isolation cooling pump trip and throttle valve planned maintenance on August 9
- "B" standby liquid control pump accumulator drain valves replacement on September 10
- "A" service water pump repack and shaft inspection on September 11
- "A" emergency diesel generator number 14 cylinder oil booster pump air line replacement on September 13

b. Inspection Scope

No findings were identified.

1R22 Surveillance Testing (71111.22 – 5 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 TS, 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:

- "B" fuel oil transfer pump and discharge check valve quarterly surveillance on July 16 (in-service test)
- "C" residual heat removal pump quarterly surveillance on July 25
- "A" emergency diesel generator fast start surveillance on September 4
- Reactor coolant system leak detection surveillance, the week of September 10 (reactor coolant system)
- Standby liquid control pump comprehensive surveillance on September 27 (in-service test)

b. Findings

Introduction. The inspectors identified a Green NCV of TS 6.4, "Procedures," for Entergy's failure to implement a surveillance activity in accordance with the written procedure. Specifically, the inspectors identified that during a surveillance test, dedicated operators required to maintain operability of primary containment left the immediate vicinity of open manual containment isolation valves.

Description. On July 25, Entergy personnel were performing the quarterly residual heat removal pump "C" surveillance in accordance with OPST-RHR-4124-13C, "RHR Pump C Operability Test (Quarterly)." A limitation described within the procedure states that when opening a manual containment isolation valve that is within the primary containment boundary when containment integrity is required, Entergy shall either enter the TS limiting condition of operation (TS 3.7.A.8) or apply administrative controls. The administrative controls must consist of a dedicated operator stationed in the immediate vicinity of the valve controls to rapidly close the valve when directed by the control room and establishment of immediately available communications with the control room. Then, prior to the step directing the opening of the "C" residual heat removal pump suction pressure test connection isolation valve and discharge pressure test connection isolation valve, the procedure includes a "Caution" followed by an initial block step text that directs when primary containment is required, a dedicated operator is to be

stationed at each valve, with immediately available communications to the control room, before opening the two valves.

During the surveillance, the inspectors identified that the dedicated operators left the immediate vicinity of the valve controls. The inspectors were unable to locate the dedicated operators and questioned the shift manager regarding the status of the dedicated operators and operability of primary containment. The shift manager paged the operators who stated that they had left the reactor building and were waiting in the radwaste control room, a low dose area, until further actions were required. The shift manager instructed the operators to return, and remain within the room containing the isolation valves as long as the valves were open. The time during which the valves were open and the operators were not within the immediate vicinity was 37 minutes. However, due to the temporary instrumentation connected to the open isolation valves, residual heat removal system valves which could be closed to reduce adverse leakage, and the valves' location providing a water seal from the torus, any potential leakage from containment would have been limited.

On January 19, 1999, the NRC issued a TS amendment for VY that included provision for not declaring primary containment inoperable given circumstances as described above. The submittal correspondence defined immediate vicinity to include no physical barriers between the dedicated operator and the subject valve, such as ladders, stairs, doors, and distances greater than several feet. In the absence of maintaining the administrative controls, TS 3.7.A.8 would apply, requiring an orderly shutdown to be initiated and the reactor to be in a cold shutdown condition within 24 hours. After followup questioning, the inspectors and Entergy personnel determined that there was a general and variable misunderstanding of these requirements within the operations department.

Entergy's corrective actions included restoring the administrative controls required to maintain primary containment operability during the subject surveillance test, initiating CR-VTY-2012-03561, sending a memorandum to and discussing the issue with all operating crew shift managers explaining the error and the requirements of a dedicated operator, and issuing a temporary night order further explaining these requirements. Additional corrective actions included implementing and tracking training for all operators on these requirements and revising licensed operator training on primary containment to specifically describe these requirements.

Analysis. The inspectors determined that Entergy personnel's failure to remain within the immediate vicinity of open manual containment isolation valves was a performance deficiency that was reasonably within Entergy's ability to foresee and correct and should have been prevented. Traditional enforcement does not apply since there were no actual safety consequences, impacts on the NRC's ability to perform its regulatory function, or willful aspects to the finding. This finding is more than minor because it is associated with the Human Performance attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the dedicated operators were required to be stationed in the immediate vicinity of the valve controls to rapidly close the valves when primary containment isolation is required during accident conditions, but the operators were significantly beyond the required immediate vicinity when they left the reactor building.

The inspectors determined the significance of the finding using IMC 0609, Appendix H, "Containment Integrity Significance Determination Process." The finding was determined to be of very low safety significance (Green) using Appendix H, Table 6.2, "Phase 2 Risk Significance – Type B Findings at Full Power," because primary containment was inoperable for 37 minutes, i.e. less than 3 days.

The inspectors determined that this finding had a cross-cutting aspect in the Human Performance cross-cutting area, Resources component, because the training of personnel did not describe specific requirements of dedicated operators, including the definition of immediate vicinity [H.2(b)].

Enforcement. TS 6.4, "Procedures," requires, in part, that written procedures be established, implemented, and maintained covering surveillance and testing requirements. Contrary to the above, on July 25, Entergy did not implement surveillance procedure OPST-RHR-4124-13C. Entergy's corrective action to restore compliance consisted of returning the dedicated operators to the immediate vicinity of the open manual containment isolation valves. Because this violation was of very low safety significance and was entered into the corrective action program (CR-VTY-2012-03561), this violation is being treated as an NCV, consistent with the NRC Enforcement Policy. **(NCV 05000271/2012004-02, Dedicated Operators Required for Operability under Applied Administrative Controls Left Immediate Vicinity of Open Valves).**

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluation (71114.02 – 1 Sample)

a. Inspection Scope

An onsite review was conducted to assess the maintenance and testing of the alert and notification system (ANS). The inspectors conducted a review of the ANS testing and maintenance programs. The inspectors reviewed the associated ANS procedure and the Federal Emergency Management Agency approved ANS design report to ensure compliance with design report commitments for system maintenance and testing. 10 CFR 50.47, "Emergency Plans," (b)(5) and the related requirements of 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," were used as reference criteria.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03 – 1 Sample)

a. Inspection Scope

The inspectors conducted a review of VY's emergency response organization (ERO) augmentation staffing requirements and the process for notifying and augmenting the ERO. The review was performed to verify the readiness of key Entergy staff to respond to an emergency event and to verify Entergy's ability to activate their emergency response facilities (ERF) in a timely manner. The inspectors reviewed the VY

emergency plan for ERF activation and ERO staffing requirements, the ERO duty roster, Entergy's procedures, communication test reports, the most recent drive-in drill report, and condition reports. The inspectors also reviewed a sample of ERO responder training records to verify training and qualifications were up to date. 10 CFR 50.47 (b)(2) and related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP5 Maintaining Emergency Preparedness (71114.05 – 1 Sample)

a. Inspection Scope

The inspectors reviewed a number of activities to evaluate the efficacy of Entergy's efforts to maintain the VY emergency preparedness program. The inspectors reviewed: letters of agreement and/or memorandums of understanding with offsite agencies; 10 CFR 50.54, "Conditions of Licenses," (q) emergency plan change process and practice; Entergy's maintenance of equipment important to emergency preparedness; records of evacuation time estimate population evaluation; and provisions for, and implementation of, primary, backup, and alternate ERF maintenance. The inspectors conducted a walkdown of the control room to inspect equipment important to emergency preparedness, which included interviews with control room staff on the process for identifying and managing out-of-service equipment. The inspectors also verified Entergy's compliance at VY with new NRC emergency preparedness regulations regarding: emergency action levels for hostile action events; the emergency operations facility performance-based approach; emergency response organization augmentation at alternate ERFs; event declaration within 15 minutes; and protective actions for on-site personnel during events.

The inspectors further evaluated Entergy's ability to maintain their emergency preparedness program through their identification and correction of emergency preparedness weaknesses, by reviewing a sample of drill reports, actual event reports, self-assessments, a 10 CFR 50.54(t) audit, and condition reports. The inspectors reviewed a sample of relevant condition reports initiated at VY from August 2010 through August 2012. 10 CFR 50.47(b) and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06 – 1 sample)

a. Inspection Scope

The inspectors evaluated the conduct of a routine emergency drill on September 5 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 reviewed condition reports initiated following the drill to compare inspector observations with those identified by Entergy staff in order to evaluate Entergy's critique and to verify that Entergy staff was properly identifying weaknesses and entering them into the corrective action program.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03 - 1 sample)

During the week of July 9 to 12, the inspectors verified that in-plant airborne concentrations were being controlled consistent with as low as reasonably achievable (ALARA) principles and that the use of respiratory protection devices did not pose an undue risk to the wearer. The inspectors used the requirements in 10 CFR 20, "Standards for Protection Against Radiation," Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection," Regulatory Guide 8.25, "Air Sampling in the Workplace," NUREG-0041, "Manual of Respiratory Protection Against Airborne Radioactive Material," the TS, and Entergy's procedures as criteria for determining compliance.

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the UFSAR to identify areas of the plant designed as potential airborne radiation areas and any associated ventilation systems or airborne monitoring instrumentation. This review included instruments used to identify changing airborne radiological conditions such that actions to prevent an overexposure may be taken. The review included an overview of the respiratory protection program and a description of the types of devices used. The inspectors reviewed the UFSAR, TS, and emergency planning documents to identify location and quantity of respiratory protection devices stored for emergency use. The inspectors reviewed Entergy's procedures for maintenance, inspection, and use of respiratory protection equipment including self-contained breathing apparatus (SCBA), as well as procedures for air quality maintenance. The inspectors reviewed reported performance indicators to identify any related to unintended dose resulting from intakes of radioactive material.

b. Findings

No findings were identified.

.2 Engineering Controls

a. Inspection Scope

The inspectors reviewed Entergy's use of permanent and temporary ventilation to determine whether Entergy uses ventilation systems as part of its engineering controls to control airborne radioactivity. The inspectors reviewed procedural guidance for use of installed plant systems to reduce dose and assessed whether the systems are used, to the extent practicable, during high-risk activities.

The inspectors selected two installed ventilation systems (standby gas treatment and advanced off-gas) used to mitigate the potential for airborne radioactivity. The inspectors evaluated whether the ventilation system operating parameters were consistent with maintaining concentrations of airborne radioactivity in work areas below the concentrations of an airborne radioactive material area. The inspectors selected one temporary ventilation system used to support work in contaminated areas. The inspectors assessed whether the use of this system was consistent with Entergy procedural guidance and ALARA principles.

The inspectors reviewed airborne monitoring protocols by selecting two installed systems (containment particulate and gas and advanced off-gas particulate and gas radiation monitors) used to monitor and warn of changing airborne concentrations in the plant. The inspectors evaluated whether the alarms and setpoints were sufficient to prompt actions to ensure that doses are maintained within the limits of 10 CFR 20 and ALARA. The inspectors assessed whether Entergy had established threshold criteria for evaluating levels of airborne beta-emitting and alpha-emitting radionuclides.

b. Findings

No findings were identified.

.3 Use of Respiratory Protection Devices

a. Inspection Scope

The inspectors evaluated whether Entergy had established means (such as routine bioassay) to determine that the level of protection (protection factor) provided by the respiratory protection devices during use was at least as good as that assumed in Entergy's work controls and dose assessment. The inspectors assessed whether respiratory protection devices used to limit the intake of radioactive materials were certified by the National Institute for Occupational Safety and Health/Mine Safety and Health Administration or approved by the NRC. The inspectors reviewed records of air testing for supplied-air devices and SCBA bottles to assess whether the air used in these devices meets or exceeds Grade D quality. The inspectors reviewed plant breathing air supply systems to determine whether they meet the minimum pressure and airflow requirements for the devices in use.

The inspectors selected five individuals qualified to use respiratory protection devices, and assessed whether they were deemed qualified to use the devices by successfully passing an annual medical examination, respirator fit-test, and relevant respiratory protection training. The inspectors reviewed training curricula for users of respiratory protection devices. The inspectors chose three respiratory protection devices staged

and ready for use in the plant. The inspectors assessed the physical condition of the device components and reviewed records of equipment inspection for each type of equipment. The inspectors selected several of the devices and reviewed records of maintenance on the vital components. The inspectors verified that onsite personnel assigned to repair respiratory protection equipment had received vendor-provided training.

b. Findings

No findings were identified.

.4 SCBA for Emergency Use

a. Inspection Scope

The inspectors reviewed the status and surveillance records of selected SCBAs staged in-plant for use during emergencies. The inspectors reviewed Entergy's capability for refilling and transporting SCBA air bottles to and from the control room and the operations support center during emergency conditions.

The inspectors selected three individuals on control room shift crews and from designated departments currently assigned emergency duties to assess whether control room operators and other emergency response and radiation protection (RP) personnel were trained and qualified in the use of SCBA. The inspectors evaluated whether personnel assigned to refill bottles were trained and qualified for that task. The inspectors determined whether appropriate mask sizes and types were available for use. The inspectors determined whether on-shift operators and radiation workers had no facial hair that would interfere with the sealing of the mask to the face and whether vision correction mask inserts were available.

The inspectors reviewed the past two years of maintenance records for one SCBA unit to verify that any maintenance and repairs on the unit were performed by individuals certified by the manufacturer of the device to perform the work. For the SCBAs that were ready for use, the inspectors verified that the required periodic air cylinder hydrostatic testing was documented and up to date.

b. Findings

No findings were identified.

.5 Problem Identification and Resolution

a. Inspection Scope

The inspectors evaluated whether problems associated with the control and mitigation of in-plant airborne radioactivity were being identified by Entergy at an appropriate threshold and were properly addressed for resolution in Entergy's corrective action program. The inspectors assessed whether the corrective actions were appropriate for a selected sample of problems involving airborne radioactivity and were appropriately documented by Entergy.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04)

During the week of July 9 to 12, the inspectors verified that occupational dose was appropriately monitored and assessed. The inspectors used the requirements in 10 CFR 20, Regulatory Guide 8.13, "Instructions Concerning Prenatal Radiation Exposures," Regulatory Guide 8.36, "Radiation Dose to Embryo Fetus," Regulatory Guide 8.40, "Methods for Measuring Effective Dose Equivalent from External Exposure," the TS, and Entergy's procedures as criteria for determining compliance.

.6 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the most recent National Voluntary Laboratory Accreditation Program (NVLAP) accreditation report on Entergy's vendor's most recent results to determine the status of the accreditation. The inspectors reviewed Entergy's procedures associated with dosimetry operations, including issuance/use of external dosimetry, assessment of internal dose, and evaluation of, and dose assessment for, radiological incidents. The inspectors evaluated whether Entergy had established procedural requirements for determining when external dosimetry and internal dose assessments are required.

b. Findings

No findings were identified.

.7 External Dosimetry

a. Inspection Scope

The inspectors verified that Entergy's dosimetry vendor is NVLAP accredited and that the approved irradiation test categories for each type of personnel dosimeter used were consistent with the types and energies of the radiation present and the way the dosimeter was used. The inspectors evaluated the onsite storage of dosimeters before issuance, during use, and before processing/reading. The inspectors also reviewed the guidance provided to radiation workers with respect to care and storage of dosimeters.

The inspectors assessed the use of electronic personnel dosimeters (EPD) to determine if Entergy uses a "correction factor" to address the response of the EPD as compared to the dosimeter of legal record for situations when the EPD is used to assign dose and whether the correction factor is based on sound technical principles. The inspectors reviewed corrective action program documents for five dosimetry events for adverse trends related to EPDs. The inspectors assessed whether Entergy had identified any adverse trends and implemented appropriate corrective actions.

b. Findings

No findings were identified.

.8 Internal Dosimetry

Routine Bioassay (In Vivo)

a. Inspection Scope

The inspectors reviewed Entergy's procedures used to assess the dose from internally deposited radionuclides using whole body counting (WBC) equipment. The inspectors evaluated whether the procedures addressed methods for differentiating between internal and external contamination, the release of contaminated individuals, determining the route of intake, and the assignment of dose. The inspectors reviewed the whole body count process to determine if the frequency of measurements was consistent with the biological half-life of the radionuclides available for intake.

The inspectors reviewed Entergy's evaluation for the use of portal radiation monitors as a passive monitoring system. The inspectors assessed whether instrument minimum detectable activities were adequate to determine the potential for internally deposited radionuclides. The inspectors selected a WBC measurement and evaluated whether the counting system had sufficient counting time/low background to ensure appropriate sensitivity to radionuclides of interest. The inspectors evaluated how Entergy accounts for hard-to-detect radionuclides in their internal dose assessments.

b. Findings

No findings were identified.

Special Bioassay (In Vitro)

a. Inspection Scope

The inspectors selected one internal dose assessment obtained using WBC. There was no internal dose assessment obtained using urinalysis or fecal sample results for the inspectors to review. The inspectors reviewed the vendor laboratory quality assurance program. The inspectors verified the laboratory participated in an industry recognized cross-check program that included reviewing, evaluating, and resolving out-of-tolerance results.

b. Findings

No findings were identified.

Internal Dose Assessment – Airborne Monitoring

a. Inspection Scope

Entergy did not perform any internal dose assessments using airborne/derived air concentration monitoring during the period reviewed.

b. Findings

No findings were identified.

Internal Dose Assessment – WBC Analyses

a. Inspection Scope

The inspectors reviewed a dose assessment performed by Entergy using the results of WBC analyses. The inspectors verified that affected personnel were properly monitored with calibrated equipment and that internal exposures were assessed consistent with Entergy's procedures.

b. Findings

No findings were identified.

.9 Special Dosimetric Situations

Declared Pregnant Workers

a. Inspection Scope

The inspectors assessed whether Entergy informed workers, as appropriate, of the risks of radiation exposure to the embryo/fetus, the regulatory aspects of declaring a pregnancy, and the specific process to be used for (voluntarily) declaring a pregnancy. The inspectors reviewed the dosimetry records for the one individual who had declared pregnancy during the current assessment period and verified that Entergy's radiological monitoring program (internal and external) for declared pregnant workers was technically adequate to assess the dose to the embryo/fetus. The inspectors reviewed exposure results and monitoring controls that Entergy implemented.

b. Findings

No findings were identified.

Dosimeter Placement and Assessment of Effective Dose Equivalent for External Exposures

a. Inspection Scope

The inspectors reviewed Entergy's methodology for monitoring external dose in non-uniform radiation fields or where large dose gradients exist. The inspectors evaluated Entergy's criteria for using alternate monitoring, such as multi-badging.

b. Findings

No findings were identified.

Shallow Dose Equivalenta. Inspection Scope

There were no dose assessments for shallow dose equivalent available for review. The inspectors evaluated Entergy's method (e.g., VARSKIN or similar code) for calculating shallow dose equivalent from distributed skin contamination or discrete radioactive particles.

b. Findings

No findings were identified.

Neutron Dose Assessmenta. Inspection Scope

The inspectors evaluated Entergy's neutron dosimetry program, including dosimeter types and/or radiation survey instrumentation. There were no neutron doses measured above the minimum sensitivity for review during the reporting period.

b. Findings

No findings were identified.

Assigning Dose of Recorda. Inspection Scope

The inspectors reviewed special dosimetric situations and assessed Entergy's process for assigning dose of record for total effective dose equivalent, shallow dose equivalent, and lens dose equivalent. The inspectors assessed external and internal monitoring results, supplementary information on individual exposures, and radiation surveys when dose assignment was based on these techniques.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES4OA1 Performance Indicator (PI) Verification (71151).1 Safety System Functional Failures (1 sample)a. Inspection Scope

The inspectors sampled Entergy's submittals for the Safety System Functional Failures performance indicator for the period of July 1, 2011, through June 30, 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline,"

Revision 6, 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, 2011 through June 30, 2012:

- High Pressure Injection System
- Heat Removal System

To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI 99-02. The inspectors also reviewed Entergy's operator narrative logs, operating procedures, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

.3 EP Performance Indicators (3 samples)

a. Inspection Scope

The inspectors reviewed data for the three emergency preparedness performance indicators, which are: (1) Drill and Exercise Performance; (2) ERO Drill Participation; and (3) ANS Reliability. The last NRC emergency preparedness inspection at Vermont Yankee was conducted in the second calendar quarter of 2011. Therefore, the inspectors reviewed supporting documentation from emergency preparedness drills and equipment tests from the second calendar quarter of 2011 through the second calendar quarter of 2012 to verify the accuracy of the reported PI data. The acceptance criteria documented in NEI 99-02 were used as reference criteria.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 1 sample)

.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 Annual Sample: Automatic Depressurization System Actuator Leakage

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's apparent cause analyses and corrective actions associated with the issue of actuator stem leakage on valves in the automatic depressurization system (ADS). Specifically, Entergy identified repeat occurrences of leakage around actuator stems during the 2009 and 2011 refueling outages. The inspectors determined whether Entergy had taken appropriate corrective actions to prevent recurrence of the leakage. Additionally, the inspectors reviewed an operability determination performed during the previous operating cycle following the discovery by Entergy that the seal installed on the ADS actuator stems did not meet environmental qualification requirements.

The inspectors interviewed plant personnel and reviewed test procedure results, condition reports, engineering evaluations, root cause analyses, and manufacturer data to assess Entergy's problem identification, evaluation, and corrective action effectiveness with respect to the ADS actuator leakage. Specifically, the inspectors reviewed the documents to determine if the seal material used on the ADS actuator stems from 2008 to 2011 should be attributed as the root cause of the 2009 and 2011 stem leakage and to verify that the replacement seal material now installed was qualified for the expected environmental conditions. Additionally, the inspectors reviewed the TS, the UFSAR, and Vermont Yankee licensing documents to assess adverse impact due to the leakage with respect to design basis requirements. Finally, the inspectors evaluated whether the compensatory actions taken by Entergy following identification of the degraded condition provided reasonable assurance of operation of the ADS system during a design basis event and that Entergy's conclusion that the system remained operable with the degraded condition was correct.

b. Findings and Observations

No findings were identified.

Entergy modified the actuator system in 2008. However, in consultation with the manufacturer, Entergy incorrectly concluded that the changes to the actuators were “like for like” replacement of components. Entergy failed to determine that the seal material for the actuator stem nut had been changed from Silicon to Buna-N. This change resulted in the temperature rating of the seal dropping from 400 degrees Fahrenheit (F) to 225 degrees F. During the 2009 refueling outage, Entergy found nitrogen to be leaking from the actuators and determined the actuator stem nut seals were degraded. However, Entergy’s evaluation of the seal incorrectly concluded that the seal material was defective and a new Buna-N seal was installed. Entergy performed a subsequent evaluation of the seal material and determined that the material was Buna-N, not defective, and the failure of the material was due to exceeding the thermal rating (225 degrees F) of Buna-N. Following identification that the seal material did not meet environmental conditions, Entergy performed an operability determination which concluded that the ADS system was operable, but degraded. These performance deficiencies were previously evaluated by the NRC in inspection reports 05000271/2011002 and 05000271/2011008.

The ADS system consists of four 3-stage safety relief valves with an actuator attached to the valves so that they can be opened using a nitrogen gas supply. The UFSAR states that nitrogen for the actuation of the valves is stored in accumulators installed in the drywell that are sized to ensure sufficient gas is available for the required number of ADS valve actuations following a design basis accident. This system was credited to respond to design basis accidents and was required to be operable by TS. Additionally, nitrogen bottles were installed outside the drywell to actuate the ADS system following a design basis seismic event. The bottles were sized to allow operators to control reactor pressure using the ADS system for several days following the event. The inspectors determined that this portion of the system had not been evaluated or licensed for design basis accidents other than seismic events.

The inspectors reviewed the evaluations performed by Entergy that assessed past operability of the system prior to the 2011 refueling outage and the operability determination performed during the operating cycle. By crediting the use of the nitrogen bottles, Entergy determined that an adequate nitrogen supply would be available to respond to design basis accidents and events even with the additional loss of inventory from the accumulator stem leakage. Entergy concluded that the ADS system had remained operable because there was adequate nitrogen inventory available. The inspectors questioned whether the bottles and piping would be available for all design basis accidents. In response, Entergy performed an evaluation and concluded the bottle system had been designed to survive the required design basis accidents and would be available. The inspectors reviewed and concurred with the assessment, but noted that the evaluation was not done prior to crediting the system in the 2011 operability determination.

Finally, the inspectors evaluated the corrective action that replaced the Buna-N seal material with Viton[®], a fluoroelastomer, during the 2011 refueling outage. The inspectors found that this material had the same properties as the previously installed silicon seal,

with a temperature rating of 400 degrees F, and met the environmental requirements for the system.

4OA5 Other Activities

.1 Temporary Instruction 2515/182, Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks, Phase 1 (2515/182 – 1 Sample)

a. Inspection Scope

The inspectors reviewed Entergy's buried piping and underground piping and tanks program in accordance with paragraphs 03.01a through 03.01c of Temporary Instruction 2515/182. The inspectors concluded that Entergy's program met all applicable aspects of NEI 09-14, "Guideline for the Management of Underground Piping and Tank Integrity," Revision 1, as set forth in Table 1 of Temporary Instruction 2515/182.

b. Findings

No findings were identified.

.2 Temporary Instruction 2515/187 – Inspection of Near-Term Task Force Recommendation 2.3 – Flooding Walkdowns

On September 24, inspectors commenced activities to independently verify that Entergy conducted external flood protection walkdown activities using an NRC-endorsed walkdown methodology. These flooding walkdowns are being performed at all sites in response to Enclosure 4 of a letter from the NRC to licensees entitled, "Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Daiichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340). The results of this temporary instruction will be documented in a future inspection report.

.3 Temporary Instruction 2515/188 – Inspection of Near-Term Task Force Recommendation 2.3 – Seismic Walkdowns

On October 1, inspectors commenced activities to independently verify that Entergy conducted seismic walkdown activities using an NRC-endorsed seismic walkdown methodology. These seismic walkdowns are being performed at all sites in response to Enclosure 3 of a letter from the NRC to licensees entitled, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Daiichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340). When complete, the results of this temporary instruction will be documented in a future inspection report.

.4 Independent Spent Fuel Storage Installation (60855.1 – 1 sample)

a. Inspection Scope

The inspectors reviewed routine operational surveillance data, including radiological surveillance and ventilation exhaust temperatures for the vertical storage modules,

located at the Independent Spent Fuel Storage Installation (ISFSI) facility at VY. The inspectors toured the facility and made independent radiation measurements at the facility. The inspectors reviewed monitoring data from the TLDs on the owner controlled area fence, dose rates from the ISFSI radiation surveys, and temperature readings on the exhaust vents at the vertical storage modules. The inspectors evaluated the data against 10 CFR 20, the ISFSI TS, and applicable Entergy procedures.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

On July 12, the inspectors presented the radiation safety baseline inspection results to Mr. Christopher Wamser, Site Vice President, and other members of the Entergy staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

On July 19, the inspectors presented the Temporary Instruction 2515/182, Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks, Phase 1, inspection results to Mr. Michael Gosekamp, General Manager of Plant Operations, and other members of the Entergy staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

On July 27, the inspectors presented the licensed operator requalification inspection results to Mr. Kevin Stupak, Manager of Training and Development, and other members of the Entergy staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

On August 17, the inspectors presented the automatic depressurization system actuator leakage annual sample inspection results to Mr. Michael Romeo, Director of Nuclear Safety Assurance, and other members of the Entergy staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

On September 14, 2012, the inspectors presented the emergency preparedness program inspection results to Mr. Christopher Wamser, Site Vice President, and other members of the Entergy staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

On October 15, the inspectors presented the inspection results to Mr. Michael Gosekamp, General Manager of Plant Operations, and other members of the Entergy staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION**KEY POINTS OF CONTACT**Vermont Yankee Personnel

C. Wamser, Site Vice President
 M. Gosekamp, General Manager of Plant Operations
 M. Romeo, Director of Nuclear Safety
 K. Stupak, Manager, Training and Development
 G. Wierzbewski, Acting Engineering Director
 S. Aprea, Shift Manager
 J. Bengtson, CA&A Manager
 R. Busick, Asst. Operations Manager
 T. Capelletti, Mechanical Superintendent
 M. Castronova, Manager of Projects
 P. Corbett, Quality Assurance Manager
 D. Deer, Control Room Supervisor
 V. Ferrizzi, Shift Manager
 S. Goodman, Mechanical Maintenance Supervisor
 J. Hardy, Chemistry Manager
 E. Harms, Asst. Operations Manager
 R. Heathwaite, Chemistry Supervisor
 D. Jones, Operations Manager
 L. Leigh, I&C Supervisor
 M. McKenney, Emergency Preparedness Manager
 P. McKenney, Material, Purchasing and Contracts Manager
 J. Rogers, Design Engineering Manager
 P. Ryan, Security Manager
 K. Sweet, Programs and Components Engineering Supervisor
 J. Taylor, Operations Training Superintendent
 D. Tkatch, Radiation Protection Manager
 R. Wanczyk, Licensing Manager
 J. Ward, I&C Superintendent
 K. Whippie, Chemistry Supervisor

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSEDOpened/Closed

05000271/2012004-01	FIN	Incorrect Assessment of Equipment Condition Resulted in Single Recirculating Loop Operation (Section 1R12)
05000271/2012004-02	NCV	Dedicated Operators Required for Operability under Applied Administrative Controls Left Immediate Vicinity of Open Valves (Section 1R22)

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

OPOP-PHEN-3127, "Natural Phenomenon," Revision 8
 OPOP-PREP-2196, "Seasonal Preparedness," Revision 1

Condition Reports

CR-VTY-2012-03345
 CR-VTY-2012-03447

Section 1R04: Equipment Alignment

Procedures

OP 2120, "High Pressure Coolant Injection System," Revision 60
 OPOP-SW-2181, "Service Water/Alternate Cooling Operating Procedure," Revision 5
 OPOP-LRW-2151, "Liquid Radwaste," Revision 3
 OPOP-4kV-2142, "4kV Electrical System," Revision 2
 OP 2195, "Fuel Oil Transfer System," Revision 37

Drawings

G-191159, Sheet 1, "Flow Diagram Service Water System," Revision 84
 G-191159, Sheet 2, "Flow Diagram Service Water System," Revision 95
 G-161169, Sheet 1, "Flow Diagram High Pressure Coolant Injection System," Revision 52
 G-191169, Sheet 2, "Flow Diagram High Pressure Coolant Injection System," Revision 44

Condition Reports

CR-VTY-2012-02745	CR-VTY-2012-03553	CR-VTY-2012-03950
CR-VTY-2012-03487	CR-VTY-2012-03949	

Miscellaneous

SW, "Design Basis Document – Service Water"
 SWSYS, "Service Water Residual Heat Removal Service Water and Alternate Cooling System Design Basis Document," Revision 31
 Service Water System Health Report, 2nd Quarter 2012
 OPON -3171-01, "Loss of Bus 3," Revision 1
 EMMP-INSP-00216-22, "Weekly Yard Readings and Brush Inspections," Revision 4
 Scaffold Log 12-142

Section 1R05: Fire Protection

Procedures

OP 3020, "Fire Emergency Response," Revision 57

Miscellaneous Documents

"Fire Hazards Analysis," Appendix B, Revision 12
 VYSSCA, "Safe Shutdown Capability Analysis," Revision 10

PFP-TB-8, "Lube Oil Room," Revision 3
 Vermont Yankee NPS Fire Hazards Analysis, Revision 12
 Technical Requirements Manual 3.13 Fire Protection System, Revision 43
 Fire Brigade Pre-Fire Plan – FZ-12
 Technical Requirements Manual, "3.13 Fire Protection System," Revision 43
 Fire Brigade Pre-Fire Plan – FA-12
 SIP-2012-52, "TB 272' Hallway West of Control Room," 8/16/2012
 VY OPF 4339.01, "Surveillance – Flame and Smoke Detectors," 9/23/2011

Condition Reports

CR-VTY-2012-03987 CR-VTY-2012-03989 CR-VTY-2012-03990

Drawings

G-191163 Sheet 1, "Flow Diagram Fire Protection System Inner Loop," Revision 46

Section 1R07: Heat Sink Performance

Procedures

OP 4124, "Residual Heat Removal and RHR Service Water Surveillance," Revision 118

Condition Reports

CR-VTY-2011-05118 CR-VTY-2012-00362
 CR-VTY-2011-05225 CR-VTY-2012-00636

Work Orders

WO 52328833, "Perform RHR Heat Exchange Cleaning and Baffle Plate Inspection"

Miscellaneous

EPRI NP-7552 Heat Exchanger Performance Monitoring Guidelines
 Residual Heat Removal Service Water System Health Report, 2nd Quarter 2012
 Various Residual Heat Removal Service Water System (RHRSW) Pump "A" and "C" Valve
 Operability and Full Flow Test Data Sheets
 UPSAR 8.5, "Standby Diesel Generator System," Revision 25
 EPRI NP-7552 Heat Exchanger Performance Monitoring Guidelines
 Emergency Diesel Generators System Health Report, 2nd Quarter 2012
 E-DG-JWC-B -Tube Data Sheet
 E-DG-JWC-B-Surveillance Trends

Section 1R11: Licensed Operator Regualification Program

Condition Reports

CR-VTY-2010-05407 CR-VTY-2010-07814 CR-VTY-2011-01262
 CR-VTY-2010-07621 CR-VTY-2010-07845 CR-VTY-2011-06566

Miscellaneous Documents

Cycle 29.6 Drill Evaluation Document
 EN-HU-106, "Procedure Work Instruction Use and Adherence," Revision 0
 EN-HU-102, "Human Performance Traps & Tools," Revision 11
 OPST-HPCI-4120-02, "HPCI Pump Operability Test (Quarterly)," Revision 2
 ODSO-30, "Maintenance of NRC Licenses and STA Qualifications"
 2012 Operating Examination Sample Plan
 EN-TQ-217, "Examination Security," Revision 2
 EN-TQ-114, "Licensed Operator Regualification Training Program Description," Revision 7
 EN-TQ-201, "Systematic Approach to Training Process," Revision 19
 EN-TQ-202, "Simulator Configuration Control," Revision 8

Summary of VY Simulator Performance Testing 2010-2012
 SIM-374, "Simulator Scenario Based Testing," Revision 8
 NEI 09-09, "Nuclear Power Plant-Referenced Simulator Scenario Based Testing Methodology,"
 Revision 1

Job Performance Measures

JPM-20048C	JPM-29504F	JPM-21804
JPM-26209	JPM-26210F	JPM-20201
JPM-20050F	JPM-20601F	JPM-20015
JPM-26201	JPM-21701	JPM-26304
JPM-20501F	JPM-20207F	JPM-20048

Comprehensive Written Exams (2011)

VWEX-LOR-29-100-Week 1 (SRO)
 VWEX-LOR-29-100-Week 2 (SRO)
 VWEX-LOR-29-100-Week 5 (SRO)

Simulator Scenarios

SEG 09	SEG 15	SEG 54
SEG 10	SEG 35A	SEG 55
SEG 12	SEG 51	
SEG 57		

Simulator Testing (2011)

Steady-state and Normal Evolution Tests
 Transient Testing
 Scenario Based Testing – Scenarios

Condition Reports

CR-VTY-2010-00040	CR-VTY-2011-00002
CR-VTY-2010-00051	CR-VTY-2011-00080

Section 1R12: Maintenance Effectiveness

Procedures

EN-DC-205, "Maintenance Rule Monitoring," Revision 3
 EN-DC-324, "Preventive Maintenance Program," Revision 8
 EN-OE-100, "Operating Experience Program," Revision 14
 EN-LI-102, "Corrective Action Process," Revision 19
 EN-LI-118, "Root Cause Evaluation Process," Revision 17

Condition Reports

CR-VTY-2005-3282	CR-VTY-2010-3941	CR-VTY-2011-1683
CR-VTY-2008-1948	CR-VTY-2010-5166	CR-VTY-2011-3924
CR-VTY-2009-0613	CR-VTY-2010-5172	CR-VTY-2011-4137
CR-VTY-2009-2238	CR-VTY-2010-5182	CR-VTY-2011-5003
CR-VTY-2010-1779	CR-VTY-2010-5226	CR-VTY-2012-0426
CR-VTY-2010-2406	CR-VTY-2010-5340	CR-VTY-2012-2274
CR-VTY-2010-2636	CR-VTY-2010-5357	CR-VTY-2012-2811
CR-VTY-2010-2966	CR-VTY-2011-0717	
CR-VTY-2010-3731	CR-VTY-2011-1002	

Work Orders

WO00261493, "FCV-102-2A Found Partially Open"
WO00284738, "FC-102-2A Will Not Control Valve Shut Set at 100% in Bal"
WO52298236, "MG-1-1A, "Perform Motor/Generator Inspection IAW EMMP-MG-5277"
WO00318418, "MG-1-1A, Perform Initial Investigation of Trip IAW EN-MA-125"
WO51077833, "Perform Minor Motor and Generator Inspection IAW RP 5277"
WO51643739, "MG-1-1A; Minor Motor and Generator Inspection IAW RP 5277"
WO52287089, "Perform On-Line Motor Electrical Testing"
WO52396565, "Perform On-Line Motor Electrical Testing"

Drawings

G-191157, Sheet 2, "Flow Diagram Condensate, Feedwater and Air Evacuation Systems,"
Revision 9
G-191172, "Flow Diagram Residual Heat Removal System," Revision 72

Miscellaneous Documents

SIPD 68, "68 – Main Condenser Tube Repl (E-6-1A&B)"
SIPD 494, "494 – Analyze whether SLOP Drain Piping Supports are Adequate for Operating
Conditions"
SIPD 137, "137 – Cond Pump Seal Leak/Press Control P-2-1A, B, C"
Condensate System Health Report, 1st Quarter 2012
LO-VTYLO-2012-0059, "Snapshot Assessment on Large Motor Preventive Maintenance"

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

OP-4356, "HPCI Steam Line Flow Functional/Calibration," Revision 29
OP-4357, "High Pressure Coolant Injection Steam Line Low Pressure Functional/Calibration,"
Revision 28
OP-4358, "HPCI Steam Line and Space High Temperature Functional/Calibration," Revision 19
OP-4363, "HPCI Suction Transfer on Condensate Storage Tank Low Level Functional Test and
CST Level Instrumentation Calibration," Revision 32
EN-OP-119, "Protected Equipment Postings," Revision 5
AP 0172, "Work Schedule Risk Management – Online," Revision 25

Condition Reports

CR-VTY-2012-4125 CR-VTY-2012-4136

Miscellaneous Documents

WW1229 Schedule
WW1234 Schedule
WW1235 Schedule
WW1237 Schedule
WW1238 Schedule
EOOS Risk Assessment Tool
EN-OP-119, "Protected Equipment Postings," Revision 5
ICSP-4359, "HPCI System Power Monitor Functional Test," Revision 1

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

OPOP-RHR-2124, "Residual Heat Removal System," Revision 6

Condition Reports

CR-VTY-2007-01151	CR-VTY-2012-03596	CR-VTY-2012-04318
CR-VTY-2012-03019	CR-VTY-2012-03852	
CR-VTY-2012-03565	CR-VTY-2012-04125	

Drawings

G-191159, Sheet 1, "Flow Diagram Service Water System," Revision 84
G-191159, Sheet 2, "Flow Diagram Service Water System," Revision 95

Work Orders

WO322133, "T-3-1A Transformer Pressure Gauge Needle Oscillating"

Miscellaneous Documents

YYC-2052, "Unisolable Service Water Line Crack Evaluation," Revision 0
EC 39637, "Install Temporary Pressure Gauge on T-3-1A Start-Up Transformer"

Section 1R18: Plant Modifications

Procedures

EN-DC-136, "Temporary Modifications," Revision 7
EN-DC-173, "Leak Repair Elevations," Revision 0

Condition Reports

CR-VTY-2012-03565	CR-VTY-2012-03945
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Work Orders

WO 247398, "Replace RCIC Steam Trap ST-13-6"

Drawings

G-191159, Sheet 1, "Flow Diagram Service Water System," Revision 84
G-19174, Sheet 1, "Flow Diagram Reactor Core Isolation Cooling System," Revision 44

Miscellaneous Documents

EC 38914, "Leak Clamp Enclosure for Upstream Weld on Valve V70-817A"
YYC-341, "RHRSW Pump Motor Cooling Lines – Seismic Analysis," Revision 2, CCN-1
EN-EV-112, "Chemical Control Program," Revision 12
EC 33935, "Steam Trap ST-13-6 Replacement"
YYC-519, "SRP RCIC Part 3 + 3A"

Section 1R19: Post-Maintenance Testing

Condition Reports

CR-VTY-2012-03840	CR-VTY-2012-04125
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Work Orders

WO52355217, "Clean and Inspect RBCCW Heat Exchanger"
WO52355216, "E-8-1A Hydrolaze RBCCW Heat Exchanger"
WO52355217, "E-8-1A: Mech PMT – Clean and Inspect RBCCW Heat Exchanger"
WO52355217, "E-8-1A Reassemble RBCCW Heat Exchanger"
WO296435, "Replace SLC Pump "B" Accum. Drain Valves"
WO325552, "Repack Pump"
WO326588, "3/8 Inch Copper Tubing Air Line to 14 Cylinder Oil Pump"
WO52327642, "V13-1; Valve Overhaul"

WO323332, "FC-13-91: Controller Not Functioning Correctly During Cal"

Miscellaneous Documents

RCW-1, "Design Basis Document for Reactor Building Closed Cooling Water System," Revision 15

OPST-EDG-4126-02A, "Monthly "A" EDG Slow Start Operability Test," Revision 2

MMMP-RCIC-5296-01, "RCIC Overspeed Trip Testing using the Terry Turbine Overspeed Trip Device," Revision 0

RCIC, "Design Basis Document for Reactor Core Isolation Cooling System," Revision 20

LO-WTVTY-2012-0244

VYEM 119, "RCIC Turbine Operation and Maintenance Instruction Manual," Revision 4

Calibration Data Sheet, FC-13-91, 08/2007

Section 1R22: Surveillance Testing

Procedures

OP 4114, "Standby Liquid Control Surveillance," Revision 71

OP 4114, "Standby Liquid Control Surveillance," Revision 72

Drawings

DWG5920-00717, "Standby Liquid Control System Process Diagram," Revision 5

Condition Reports

CR-VTY-2012-03469

CR-VTY-2012-04271

CR-VTY-2012-04501

CR-VTY-2012-03561

CR-VTY-2012-04276

CR-VTY-2012-04704

Miscellaneous Documents

EDG, "Design Basis Document for Emergency Diesel Generator and Auxiliary Systems," Revision 23

OPST-FO-4195-02B, "Fuel Oil Transfer Pump (P92-1B) and Discharge Check Valve (FO-28B) Operability Test (Quarterly)," Revision 0

OPST-FO-4195-03B, "Fuel Oil Transfer Pump (P92-1B) and Discharge Check Valve (FO-28B) Operability Test (CYC)," Revision 0

4195-02B, "Fuel Oil Transfer Pump (P92-1B) and Discharge Check Valve (FO-28B) Operability Test (Quarterly)," performed 10/15/11 and 04/16/12

4195-03B, "Fuel Oil Transfer Pump (P92-1B) and Discharge Check Valve (FO-28B) Operability Test (CYC)," Revision 0

OPST-RHR-4124-13C, "RHR Pump C Operability Test (Quarterly)," Revision 1

OPST-EDG-4126-03A, "6 Month 'A' EDG Fast Start Operability Test," Revision 2

ENN-SEP-IST-001, "Inservice Testing Program Plan – Fourth Ten Year Interval," Revision 7

VY-OPF 4114.06, "SLC Pump Comprehensive Test and Discharge Check Valve Test Data Sheet," 09/27/2012

VYAPF 0211.02, "Rotating Equipment Vibration Data Sheet," 09/27/2012

Section 1EP2: Alert and Notification System Evaluation

Alert and Notification System Design Report for Vermont Yankee Nuclear Power Station

EPVN-10060, "Vermont Yankee Alert and Notification System (ANS) Maintenance Procedure," Revision 0

Public Notification System Status Annual Report, 2011

Public Notification System Status Monthly Report, 07/2010

Public Notification System Status Monthly Report, 11/2010

Public Notification System Status Monthly Report, 04/2011

Public Notification System Status Monthly Report, 09/2011
 Public Notification System Status Monthly Report, 01/2012
 Public Notification System Status Monthly Report, 06/2012

Section 1EP3: Emergency Response Organization Staffing and Augmentation System

Entergy Vermont Yankee Emergency Plan, Revision 51
 EN-EP-801, "Emergency Response Organization," Revision 5
 EN-PL-147, "Personnel Expectations Related to Emergency Response at Entergy Nuclear Sites," Revision 0
 EN-TQ-110, "Emergency Response Organization Training," Revision 6
 ENN-PL-140, "Emergency Response Organization Respiratory Protection Guidelines," Revision 1
 3 Year Mobilization Drill Report, 12/08/2009
 EPTPD, "Emergency Plan Training Program," Revision 13
 ERO Team "B" Drill, 05/16/2012
 ERO Team "A" Drill, 03/14/2012
 ERO Team "D" Drill, 11/16/2011
 ERO Team "A" Drill, 03/18/2011
 ERO B-1 Table

Section 1EP5: Correction of Emergency Preparedness Weaknesses

Condition Reports

CR-VTY-2011-00644	CR-VTY-2011-05355	CR-VTY-2012-02233
CR-VTY-2011-00714	CR-VTY-2011-05363	CR-VTY-2012-03689
CR-VTY-2011-01036	CR-VTY-2012-01270	
CR-VTY-2011-05335	CR-VTY-2012-01731	

Miscellaneous Documents

QA-07-2011-VY-1, "Vermont Yankee 2011 Emergency Plan Fleet Audit Checklist"
 OP 3506, "Emergency Equipment Readiness Check," Revision 70
 AP-10049, "Equipment Important to Emergency Response," Revision 1
 EN-EP-305, "Emergency Planning 10 CFR50.54 (Q) Review Program," Revision 3
 QS-2012-VTY-09, "Mid-audit Assessment of E-Plan Changes," 2012
 QS-2011-VY-008, "Documentation of Interface between VY E-Plan and State/Local Governments"
 KLD TR-381, "Vermont Yankee Nuclear Power Station Development of Evacuation Time Estimates, February 2005," Revision 1
 QA-07-2011-VY-1, "Emergency Planning Quality Assurance Audit Report"
 LO-VTYLO-2011-00114, "Emergency Planning Self Assessment Report," 03/5-8/2012
 Vermont Yankee Oversight Report, 11/2011 – 02/2012
 Vermont Yankee Oversight Report, 03/2012 – 06/2012

Section 2RSO3: In-Plant Airborne Radioactivity Control and Mitigation

Procedures

DP 4582, "Operation and Initial Setup of the Eberline AMS-4 Monitor," Revision 3
 EN-RP-310, "Operation and Calibration of the Eberline AMS 4 Continuous Air Monitor," Revision 3
 EN-RP-404, "Operation and Maintenance of HEPA Vacuum Cleaners and HEPA Ventilation Units," Revision 4
 EN-RP-501, "Respiratory Protection Program," Revision 4
 EN-RP-502, "Inspection Maintenance of Respiratory Protection Equipment," Revision 8

EN-RP-503, "Selection, Issue and Use Respiratory Protective Equipment," Revision 5
 EN-RP-504, "Breathing Air," Revision 3
 EN-RP-505, "Portacount Respiratory Fit-Testing," Revision 3
 OP 4506, "Operation and Source Calibration of the Reactor Building Ventilation Exhaust Air,
 AOG Building Ventilation Exhaust Air and Containment Air Monitors," Revision 16
 RPRP-USER-0527, "Radiation Protection Department Site Specific Expectations and
 Requirements," Revision 1
 RPSP-USER-4501-06, "Filter Testing Equipment Operation," Revision 0
 RPST-RDW-4501-02, "Radwaste Ventilation Filter Testing," Revision 0
 RPSP-AOG-4501-03, "AOG Filter Testing," Revision 0
 RPST-SBGT-4501-01B, "Standby Gas Treatment "B" Filter Testing," Revision 0

Audits, Self-Assessments, and Surveillances

EN-LI-104 Self-Assessment and Benchmarking Process Snapshot Assessment for Radiation
 Protection Instruments, 01/28/2010
 EN-LI-104 Self-Assessment and Benchmarking Process Snapshot Assessment for Radiation
 Airborne Dose and ISFSI Radiological Controls LO-VTYLO-2012-00087, 04/03/2012
 Vermont Yankee Mid-Cycle Assessment (included RP and Chemistry Assessment), 02/14-
 23/2011
 QA-14/15-2011-VY-1, "Entergy Nuclear Quality Assurance Report for Radiation Protection
 and Radwaste," 01/09/2012

Condition Reports

CR-VTY-2011-02960	CR-VTY-2012-02852
CR-VTY-2012-01369	CR-VTY-2012-03199

Miscellaneous

EN-RP-502, "Inspection and Maintenance of Respiratory Protection Equipment," Attachment 9.7
 Scott Air Pak Fifty 4.5 with Integrated PASS Device, 07/09/2012
 EN-RP-502, "Inspection and Maintenance of Respiratory Protection Equipment," Attachment 9.2
 SCBA Inspection Log, 01/23/2011 and 01/24/2012
 EN-RP-502, "Inspection and Maintenance of Respiratory Protection Equipment," Attachment 9.1
 Face Piece Inspection Log, 01/16/2012
 EN-RP-505 "Portacount Respirator Fit Testing," Attachment 9.4 Quantitative Fit Test Record,
 07/09/2012
 EN-RP-503, "Selection Issue and Use of Respiratory Protection Equipment," Attachment 9.1
 Respiratory Protection Equipment, 10/03/2011
 EN-RP-503, "Selection Issue and Use of Respiratory Protection Equipment," Attachment 9.1
 Respiratory Protection Equipment, 04/26/2012
 NIOSH Certificate TC-13F-96 for Scott Air PAK 4.5
 NIOSH Certificate TC-14G-0235 for Advantage 1000, Med w CS/CN P 100 Bayonet Canister
 HEPA Air Handling Unit Inventory, 06/29/2012
 HEPA Vacuum Unit Inventory, 07/10/2012
 EN-RP-504, "Breathing Air," Attachment 9.8 Grade D/Grade L Air Quality Coversheet,
 03/01/2012 and 07/02/2012

Plateau LMS Report, Workgroup Qualification Matrix for VY Respirator and All Organization, 07/10/2012
Lesson Plan, Vermont Yankee Radiation Protection Training Program RPA-05-007 Air Supplying Respirators, 07/07/2011
Lesson Plan, Vermont Yankee Radiation Protection Training Program RPA-05-009 Respiratory Fit Testing, 02/02/2011
VYOPF 4506.09, "CAM Calibration Worksheet," CAM-17-500B , Gas Detector 187, 07/02/2012
VYOPF 4506.10, "CAM Setpoint Change Request," CAM-17-500B, Gas Detector 187, 07/02/2012
VYOPF 4506.10, "CAM Setpoint Change Request," CAM-17-500B, Part. Detector 187, 07/02/2012
Heating, Ventilation & Air Cooling, System Health Report, 2nd Quarter 2012
TYCO Scott Technologies, Inc, In-House Repair Center Training Certificate for AIR-PAK 2.2/3.0/4.5/Fifty SCBA Maintenance and Overhaul, 08/07/2008
TYCO Scott Technologies, Inc, In-House Repair Center Training Certificate for PAK-ALERT Maintenance and Overhaul, 08/07/2008
RPST-RDW-4501-02 Radwaste Ventillation Filter Testing, 07/03/2012
RPSP-AOG-4501-03 AOG Filter Testing, 01/31/2012
RPST-SBGT-4051-01B Standby Gas Treatment B Filter Testing, 01/10/2012

Section 2RSO4: Occupational Dose Assessment

Procedures

EN-RP-104, "Personnel Contamination Events," Revision 6
EN-RP-201, "Dosimetry Administration," Revision 3
EN-RP-202, "Personnel Monitoring," Revision 8
EN-RP-203, "Dose Assessment," Revision 5
EN-RP-204, "Special Monitoring Requirements," Revision 6
EN-RP-205, "Prenatal Monitoring," Revision 3
EN-RP-206, "Dosimeter of Legal Record Quality Assurance," Revision 5
EN-RP-208, "Whole Body Counting and In-Vitro Bioassay," Revision 4

Audits, Self-Assessments, and Surveillances

EN-LI-104 Self-Assessment and Benchmarking Process Snapshot Assessment for Radiation Airborne Dose and ISFSI Radiological Controls LO-VTYLO-2012-00087, 04/03/2012

Condition Reports

CR-VTY-2011-02589 CR-VTY-2011-04787 CR-VTY-2012-02127
CR-VTY-2011-04590 CR-VTY-2012-02016

Miscellaneous

NVLAP Lab Code 100518-0 Landauer, Inc. Glenwood, IL, expires 12/31/2012
VYDPF 0530, Report Number CR-VTY-2008-05560 Personnel Monitoring Sensitivity Evaluation 05/20/2010
EN-RP-205, "Prenatal Monitoring," Attachment 9.1, 10/27/2010
EN-RP-205, "Prenatal Monitoring," Attachment 9.2, 05/08/2012

Section 4OA1: Performance Indicator (PI) Verification

Procedures

OP 4100, "ECCS Integrated Automatic Initiation Test," Revision 51
OP 4355, "RCIC – Auto Suction Transfer Water Level Functional/Calibration," Revision 33
OP 4360, "HPCI System Actuation Logic Functional Test," Revision 36

OP 4363, "HPCI Suction Transfer on Condensate Storage Tank Low Level Functional Test and CST Level Instrument Calibration," Revision 32

Miscellaneous Documents

MSPI Derivation Reports, 06/2012

OPST-RCIC-4121, "Reactor Core Isolation Cooling System Surveillance," Revision 2

OPST-HPCI-4120-02, "HPCI Pump Operability Test (Quarterly)," Revision 2

OPST-HPCI-4120-04, "HPCI Valve Operability Test (Quarterly)," Revision 1

LER 2012-001, "Potential to Flood Switchgear Room due to Missing Conduit Flood Seal"

LER 2011-002, "Inoperability of Both Emergency Diesel Generators due to Lack of Adherence to Procedures"

Performance Indicator Data, 2nd quarter 2011 to 2nd quarter 2012

Section 4OA2: Problem Identification and Resolution

Procedures

OP 2122, "Auto Blowdown System," Revision 24

Condition Reports

CR-VTY-2010-02677	CR-VTY-2012-03506	CR-VTY-2012-03835
CR-VTY-2011-00631	CR-VTY-2012-03510	CR-VTY-2012-03852
CR-VTY-2011-04432	CR-VTY-2012-03522	CR-VTY-2012-03870
CR-VTY-2011-04434	CR-VTY-2012-03558	CR-VTY-2012-03874
CR-VTY-2012-01156	CR-VTY-2012-03561	CR-VTY-2012-03880
CR-VTY-2012-03078	CR-VTY-2012-03565	CR-VTY-2012-03881
CR-VTY-2012-03116	CR-VTY-2012-03585	CR-VTY-2012-03882
CR-VTY-2012-03124	CR-VTY-2012-03586	CR-VTY-2012-03894
CR-VTY-2012-03133	CR-VTY-2012-03587	CR-VTY-2012-03921
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CR-VTY-2012-03211	CR-VTY-2012-03591	CR-VTY-2012-03945
CR-VTY-2012-03220	CR-VTY-2012-03593	CR-VTY-2012-03949
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CR-VTY-2012-03319	CR-VTY-2012-03628	CR-VTY-2012-03989
CR-VTY-2012-03343	CR-VTY-2012-03629	CR-VTY-2012-03990
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CR-VTY-2012-03353	CR-VTY-2012-03632	CR-VTY-2012-04050
CR-VTY-2012-03363	CR-VTY-2012-03636	CR-VTY-2012-04073
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LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ADS	Automatic Depressurization System
ALARA	as low as is reasonably achievable
ANS	Alert and Notification System
CFR	Code of Federal Regulations
DRP	[NRC] Division of Reactor Projects
DRS	[NRC] Division of Reactor Safety
EPD	electronic pocket dosimeter
ERF	emergency response facilities
ERO	Emergency Response Organization
F	Fahrenheit
IMC	inspection manual chapter
ISFSI	independent spent fuel storage installation
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NVLAP	National Voluntary Laboratory Accreditation Program
OA	other activities
PARS	Publicly Available Records System
PI	performance indicator
SCBA	self-contained breathing apparatus
SDP	significance determination process
SSC	structure, system and component
TI	temporary instruction
TS	technical specification(s)
UFSAR	Updated Final Safety Analysis Report
VY	Vermont Yankee Nuclear Power Station
WBC	whole body count
WW	workweek