



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

October 27, 2014

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

**SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION – NRC INTEGRATED
INSPECTION REPORT 05000271/2014004**

Dear Mr. Wamser:

On September 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vermont Yankee Nuclear Power Station. The enclosed inspection report documents the inspection results, which were discussed on October 7, 2014, with you and other members of your staff.

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

This report documents three violations of NRC requirements, all of which were of very low safety significance (Green and/or Severity Level IV). Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance, and because they are entered into your corrective action program, the NRC is treating these findings as non-cited violations, consistent with Section 2.3.2.a of the NRC Enforcement Policy. If you contest the non-cited violations 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, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Vermont Yankee Nuclear Power Station. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, or a finding not associated with a regulatory requirement, 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 Resident Inspector at Vermont Yankee Nuclear Power Station.

C. Wamser

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In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRCs "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's Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000271/2014004
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-271

License No. DPR-28

Report No. 05000271/2014004

Licensee: Entergy Nuclear Operations, Inc. (Entergy)

Facility: Vermont Yankee Nuclear Power Station

Location: Vernon, VT 05354

Dates: July 1, 2014 through September 30, 2014

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Reactor Projects Branch 5
Division of Reactor Projects

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SUMMARY

IR 05000271/2014004; 07/01/2014 – 09/30/2014; Vermont Yankee Nuclear Power Station; Equipment Alignment, Plant Modifications, and Problem Identification and Resolution.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Inspectors identified three findings of very low safety significance (Green and/or Severity Level IV), which were non-cited violations (NCVs). The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," dated June 19, 2012. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 19, 2013. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Barrier Integrity

- Green. The inspectors identified a finding of very low safety significance (Green) and an associated Severity Level IV NCV of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.59, "Changes, Tests and Experiments," when Entergy made changes to the reactor building crane that resulted in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, Entergy did not recognize that they had removed redundancy from the control system needed to qualify the crane as single-failure proof. Entergy entered this issue into their corrective action program as condition report (CR)-VTY-2014-03028 and completed modifications to the crane that restored the independence of the redundant upper travel limits.

The inspectors determined that the finding was more than minor because the change would have required NRC review and approval in order to qualify the crane as single-failure proof. Additionally, this finding was associated with the design control attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers (e.g. fuel cladding) protect the public from radionuclide releases caused by accidents or events. Specifically, the design change increased the likelihood of a heavy load drop, which could have impacted the fuel in the spent fuel pool.

This issue impeded the ability of the NRC to perform its regulatory oversight function because the failure to follow the requirements in 10 CFR 50.59 resulted in Entergy not submitting the change to the NRC for approval. Therefore, the enforcement aspects of this finding were processed using the Traditional Enforcement process.

This violation is associated with a finding that has been evaluated by the SDP and communicated with an SDP color reflective of the safety impact of the deficient licensee performance. The SDP, however, does not specifically consider the regulatory process impact. Thus, although related to a common regulatory concern, it is necessary to address the violation and finding using different processes to correctly reflect both the regulatory importance of the violation and the safety significance of the associated finding.

The inspectors evaluated this finding using IMC 0609, Attachment 4, "Initial Characterization of Findings." The inspectors determined that the finding affected the Barrier Integrity cornerstone and evaluated the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 3, "Barrier Integrity Screening Questions." The inspectors determined the finding was of very low safety significance (Green) because the crane was not operated over the spent fuel pool, nor was there an actual load drop.

Per Subsection d.2 of Section 6.1, "Reactor Operations," of the NRC Enforcement Policy, this is a Severity Level IV violation, because it is a 10 CFR 50.59 violation that results in conditions evaluated as having very low safety significance by the SDP.

This finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because Entergy did not avoid complacency on the review of this design by recognizing and planning for the possibility of latent issues. The 50.59 screening was not reviewed to ensure it fully captured the final design from the vendor, and as a result, the vulnerability introduced by the digital controller was not considered. [H.12] (Section 1R18)

- Green. The inspectors identified a self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Entergy staff did not implement the prescribed maintenance instructions during the refurbishment of the air-operated valve (AOV) actuator for a drywell floor drain containment isolation valve. Specifically, Entergy staff used a lubricant other than the type specified per the equipment manual, which was incompatible with the seals in the valve. Entergy's immediate corrective actions included entering the issue into their corrective action program as CR-VTY-2013-05763, performing a rebuild of the valve, and troubleshooting the as-found condition.

This finding is more than minor because it is associated with the SSC and barrier performance attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (e.g., containment) protect the public from radionuclide releases caused by accidents or events. Specifically, when tested, the valve exceeded the maximum allowable stroke time for closure and was declared inoperable. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 3 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because it was associated with the functionality of the reactor containment but did not represent an actual open pathway in the physical integrity of containment, containment isolation system, and heat removal components.

This finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Entergy personnel did not properly implement the requirements prescribed in the maintenance instructions. Specifically, during the refurbishment of the valve's actuator, Entergy staff did not use the lubricant specified in the equipment manual referenced in the work order. [H.8] (Section 4OA2.6)

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Entergy did not promptly identify conditions adverse to quality related to the service water system. Specifically, observable through-wall leaks that were reasonably able to be identified existed in service water piping supplying the emergency diesel generators' (EDGs') cooling system for an extended period of time without being

identified. In addition, the affected service water piping was not appropriately scheduled for treatment and replacement given known conditions favorable to microbiologically induced corrosion (MIC). Entergy's corrective actions to restore compliance consisted of performing complete walkdowns of all accessible safety-related service water piping, performing ultrasonic inspections of the three leak locations and fifteen extent of condition locations, conducting structural analyses to determine structural integrity of the piping with the measured thinning, and performing daily leak rate monitoring and frequent periodic ultrasonic inspections of no more than 30 day intervals.

This finding is more than minor because if left uncorrected it has the potential to lead to a more significant safety concern. Specifically, the through-wall leaks were unmonitored degraded conditions with reasonable doubt on the operability of the service water and alternate cooling systems before the results of ultrasonic inspections and new structural analyses were obtained. The inspectors determined the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding was determined to be of very low safety significance (Green) because the finding was a deficiency affecting the design and qualification of the service water and alternate cooling systems and the systems maintained their operability.

The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because Entergy did not ensure that the combination of piping replacements, chemical treatments, guidance and procedures for walkdowns, and camera coverage were adequate to support nuclear safety. [H.1] (Section 1R04)

Other Findings

A violation of very low safety significance that was identified by Entergy was reviewed by the inspectors. Corrective actions taken or planned by Entergy have been entered into Entergy's corrective action program. This violation and corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Vermont Yankee Nuclear Power Station (VY) began the inspection period operating at 100 percent power. On July 23, operators reduced power to 79 percent for a control rod pattern adjustment and returned VY to 100 percent power on July 24. On August 27, operators reduced power to 80 percent in order to perform a control rod pattern adjustment and returned VY to 100 percent power on August 28. On September 8, operators reduced power to 80 percent for a control rod pattern adjustment and returned to 100 percent power on the same day. Beginning September 15, VY started coasting down in power as it approached the end of the operating cycle. On September 29, operators reduced power to 83 percent for control rod settle time testing and returned VY to 96 percent power on September 30, the last day of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

Partial System Walkdowns (71111.04Q – 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 'B' residual heat removal (RHR) during 'A' RHR surveillance testing on July 10
- 'A' EDG and associated service water piping following the identification of a service water leak from a supply line to the 'B' EDG from July 16 through July 31
- 'B' EDG and associated service water piping following the identification of a service water leak from a supply line to the "B" EDG from July 16 through July 31
- Station blackout (SBO) diesel generator during 'A' EDG unavailability due to a failure to start and simultaneous 'B' EDG unavailability for a run required by technical specifications to ensure no common cause failure on September 30

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, technical specifications, CRs, 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. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

Introduction. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Entergy did not promptly identify conditions adverse to quality related to the service water system. Specifically, observable through-wall leaks that were reasonably able to be identified existed in service water piping supplying the EDGs' cooling system for an extended period of time without being identified. In addition, the affected service water piping was not appropriately scheduled for treatment and replacement given known conditions favorable to MIC.

Description. On July 16, 2014, Entergy personnel identified a through-wall leak from service water piping supplying cooling water to the 'B' EDG at a rate of approximately one drop per minute in the torus catwalk area of the reactor building. Entergy performed an ultrasonic examination in the area of the leak and determined that a pinhole leak was present and general wall thickness was reduced consistent with previously observed thinning due to MIC. Entergy performed a structural analysis and five extent of condition ultrasonic inspections in accordance with NRC approved American Society of Mechanical Engineers (ASME) code case N-513-3, "Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping Section XI, Division 1." The analysis determined that the piping was presently structurally acceptable under all design basis accident conditions, and until repair or replacement was performed at the next scheduled outage, daily leak rate monitoring and frequent periodic ultrasonic inspections of no more than 30 day intervals was required.

On July 19, Entergy personnel identified that the leak in the torus catwalk area was 125 ml/min. Entergy performed ultrasonic inspections and confirmed that the flaw was unchanged and the leak rate was dependent upon debris accumulation and flushing within the pinhole. Since the hole size was not addressed, the inspectors questioned the operability of the alternate cooling system which relies upon a fixed starting volume of available cooling water. Entergy determined that a hole less than 0.22 inches diameter would not deplete the excess water inventory contained within the deep basin of the cooling tower beyond the volume required to supply cooling needs for seven days. Based on the results of the ultrasonic inspection, Entergy determined that the pinhole size was significantly smaller than 0.22 inches diameter.

On July 30, Entergy personnel identified a second through-wall leak from service water piping supplying cooling water to the 'A' EDG at approximately ten drops per minute in the condensate demineralizer hold pump room of the turbine building. Entergy performed an ultrasonic examination in the area of the second leak and determined that a similar leak to the first was present and implemented ASME code case N-513-3.

On July 31, the inspectors requested Entergy personnel demonstrate available camera coverage that is relied upon for monitoring plant conditions, including leakage, within the heater bay, a locked high radiation area. Of note, the service water cooling water supply and return piping for the 'A' and 'B' EDGs traverses the heater bay along one wall, connecting the torus catwalk area and the condensate demineralizer hold pump room, the two areas in which through-wall leaks were already identified. The inspectors observed the camera images with the assistance of Entergy personnel attempting various pans and zooms. The inspectors determined that the available images were inadequate to identify potential through-wall leakage in the safety-related service water piping.

Therefore, the inspectors conducted a locked high radiation entry and walked down the single localized run of three service water pipes in the heater bay. The inspectors observed active leakage from one of the pipes from multiple locations with accumulated water deposits from evaporation on the piping insulation and floor and two puddles of water on the floor, each about one to two feet in diameter. Entergy personnel removed the pipe insulation and identified a third through-wall leak from service water piping supplying cooling water to the 'A' EDG at a rate of approximately five to ten drops per minute. Entergy performed an ultrasonic examination in the area of the third leak and determined that a similar leak to the first and second was present and implemented ASME code case N-513-3. To conduct daily leak rate monitoring, Entergy installed a remotely operated camera with direct observation of the third leak area.

The inspectors reviewed the observable conditions and recorded data from the three leaks and concluded that the second and third leaks had existed for an amount of time significantly longer than the first leak. The inspectors interviewed Entergy personnel who concurred that the second and third leaks pre-dated the first leak. So the inspectors concluded that Entergy was reasonably able to identify the second and third leaks, conditions adverse to quality, prior to July 16, and did not. In addition, the inspectors reviewed Entergy procedure OP 4160, "Turbine Generator Surveillance," Revision 58. The procedure required a monthly inspection of the heater bay using remotely operated cameras to identify abnormal conditions and did not consider physical entry unless abnormal conditions were newly identified or previously identified abnormal conditions were unable to be confirmed by camera. The inspectors reviewed previous revisions to the procedure and noted that Revision 53 required weekly physical inspections of the heater bay to identify abnormal conditions. Revision 54 eliminated the walkdown inspections upon implementation in August 2011. The inspectors concluded that the monthly inspections by remote camera, given the available coverage, were inadequate to promptly identify conditions adverse to quality in the safety-related service water piping in the heater bay commensurate with the potential safety significance of through-wall piping flaws.

Entergy initiated CR-VTY-2014-02652, CR-VTY-2014-02707, CR-VTY-2014-02842, CR-VTY-2014-02865, and CR-VTY-2014-02881 for the through-wall leaks and performed an apparent cause evaluation (ACE). Entergy concluded that the apparent cause of the leaks was MIC due to chemistry and flow conditions in the piping being favorable to bacterial growth coupled with high susceptibility of the carbon steel piping to MIC damage. Entergy also concluded that the ongoing replacement plan for service water piping did not correctly prioritize the replacement of the service water piping supplying cooling water to the EDGs and that inconsistent chemical treatment of the service water system potentially caused further MIC damage. The inspectors reviewed the evaluation and concurred with the conclusions. Finally, the inspectors reviewed Entergy's earlier hole size analysis and determined that the potential maximum flow rate from all three leaks was still bounded by the alternate cooling system's existing margin given the results of the ultrasonic inspections.

Analysis. The inspectors determined that the failure to promptly identify conditions adverse to quality, i.e. through-wall leaks in safety-related portions of the service water system, in accordance with 10 CFR 50, Appendix B, Criterion XVI, was reasonably within Entergy's ability to foresee and correct and therefore should have been prevented and was a performance deficiency. Traditional enforcement does not apply since there

were no actual safety consequences, no impacts on the NRC's ability to perform its regulatory function, and no willful aspects to the finding.

This finding is more than minor because if left uncorrected it had the potential to lead to a more significant safety concern. Specifically, the through-wall leaks were unmonitored degraded conditions with reasonable doubt on the operability of the service water and alternate cooling systems before the results of ultrasonic inspections and new structural analyses were obtained. The inspectors determined the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding was determined to be of very low safety significance (Green) because the finding was a deficiency affecting the design and qualification of the service water and alternate cooling systems and the systems maintained their operability.

The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because Entergy did not ensure that the combination of piping replacements, chemical treatments, guidance and procedures for walkdowns, and camera coverage were adequate to support nuclear safety. [H.1]

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective equipment, and nonconformances are promptly identified. Contrary to the above, from on or before July 16 through July 31, 2014, Entergy failed to promptly identify two through-wall leaks from safety-related service water piping supplying cooling water to the EDGs. Entergy's corrective actions to restore compliance consisted of performing complete walkdowns of all accessible safety-related service water piping, performing ultrasonic inspections of the three leak locations and fifteen extent of condition locations, conducting structural analyses to determine structural integrity of the piping with the measured thinning, and performing daily leak rate monitoring and frequent periodic ultrasonic inspections of no more than 30 day intervals. Entergy's planned corrective actions include repair of the three piping flaws by January 29, 2015. Because this violation was of very low safety significance and was entered into the corrective action program (CR-VTY-2014-02652, CR-VTY-2014-02707, CR-VTY-2014-02842, CR-VTY-2014-02865, and CR-VTY-2014-02881), this violation is being treated as an NCV, consistent with Section 2.3.2.a of the Enforcement Policy. **(NCV 05000271/2014004-01, Failures to Promptly Identify Through-Wall Leakage from Service Water Piping to the Emergency Diesel Generators)**

1R05 Fire Protection

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, as applicable, in accordance with procedures.

- Reactor building, elevation 345', on August 15
- 'A' EDG room on September 18
- 'B' EDG room on September 18
- SBO diesel generator and switchgear enclosures on September 30
- John Deere diesel building on September 30

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A – 1 sample)

a. Inspection Scope

The inspectors reviewed the 'A' reactor building closed cooling water system heat exchanger to determine its readiness and availability to perform its safety functions. The inspectors reviewed the design basis for the component and verified that the number of plugged heat exchanger tubes did not exceed the maximum amount allowed. The inspectors observed the heat exchanger internals after hydrolazing and reviewed the results of quarterly heat exchanger testing. The inspectors verified that Entergy initiated appropriate corrective actions for identified deficiencies.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program

.1 Licensed Operator Regualification (71111.11B – 1 sample)

a. Inspection Scope

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

Examination Results

Regualification examination results for 2014 were reviewed to determine if pass/fail rates were consistent with the guidance of IMC 0609, Appendix I, and "Operator Regualification Human Performance Significance Determination Process (SDP)."

The review verified the following:

- Individual pass rate on the dynamic simulator scenarios was greater than 80 percent. (Pass rate was 100 percent).

- Individual pass rate on the job performance measure (JPM) part of the operating examination was greater than 80 percent. (Pass rate was 100 percent).
- Individual pass rate on the comprehensive written examination was greater than 80 percent. (N/A: Written examinations were previously administered at the end of the two year requalification program cycle, October and November 2013).
- More than 80 percent of the individuals passed all portions of the requalification examination. (Pass rate was 100 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 examinations that facility staff previously administered to the operators in October and November 2013.

Operating Test Quality

The inspectors reviewed the operating tests (scenarios and JPMs) associated with the onsite examination week, plus additional scenarios and JPMs administered to operators subsequent to the inspection week.

Licensee Administration of Operating Tests

The inspectors observed facility training staff administer dynamic simulator examinations and JPMs during the week of June 23, 2014. These observations included facility evaluations of crew and individual operator performance during the simulator examinations and individual performance of JPMs.

Examination Security

The inspectors assessed whether facility staff properly safeguarded examination material and whether test item repetition guidelines were met.

Remedial Training and Re-examinations

The inspectors reviewed the remedial training package and associated re-examination for an operator who failed an annual operating test (scenario portion) administered in July 2013.

Conformance with License Conditions

License reactivation and license proficiency records were reviewed to ensure that 10 CFR 55.53 license conditions 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

Scenario-based tests and simulator performance tests were reviewed for conformance and fidelity to the plant control room. A sample of simulator deficiency reports was also reviewed to ensure facility staff addressed any 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, NRC end-of-cycle and mid-cycle reports, and the most recent NRC plant issues matrix. The inspectors focused on events associated with operator errors that may have occurred due to possible training deficiencies.

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 requalification testing on September 2, which involved an SBO, rupture of a reactor recirculation loop, and implementation of an emergency depressurization. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and changing plant conditions, and control of plant parameters. Additionally, the inspectors assessed the ability of the training staff to identify and document operator 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 on August 29, following isolation of the condensate pumps' minimum flow control valve due to its failing open. The inspectors observed activities and communications to verify that roles and responsibilities, critical steps, expected results, and hold points were discussed. The inspectors verified proper procedure use and adherence by reviewing the narrative log entries and discussing the issue with reactor operators.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on 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 and verified that the (a)(2) performance criteria established by Entergy staff were reasonable. Additionally, the inspectors ensured that Entergy staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Alternate cooling system
- Normal fuel pool cooling system

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 4 samples)a. Inspection Scope

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

- 'A' reactor building closed cooling water heat exchanger planned maintenance and 'A' EDG surveillance testing – week of June 30
- Vernon tie transformer tap change and preventive maintenance, SBO diesel generator planned maintenance, and 'B' RHR system surveillance testing – week of July 21
- 'A' EDG surveillance testing, high pressure coolant injection suction transfer on condensate storage tank level surveillance test, and emergent unavailability of the condensate pumps' minimum flow control valve – week of August 25

- Heavy lift of a Tri-Nuc cask in the reactor building, heavy lift of an air conditioning unit to the control building roof, and removal of spent filters from the spent fuel pool filter demineralizer system – week of September 8

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- Leakage from condensate storage tank tell-tale drain, CR-VTY-2014-02285 initiated on June 17
- Leak from service water piping providing cooling water to the 'B' EDG, CR-VTY-2014-02652 initiated on July 16
- Spent fuel pool rack neutron absorbing material performance testing, CR-VTY-2014-02774 initiated on July 21
- As-found test not performed prior to modifying the location of the counterweights on drywell-to-torus vacuum breaker V16-19-5D, CR-VTY-2014-03027 initiated on August 18
- Intermediate range monitor 'A' reading lower than the other channels, CR-VTY-2014-03200 initiated on September 3

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 and functionality assessments to assess whether technical specification operability was properly justified, as applicable, and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to Entergy's evaluations to determine whether the components or systems were operable or functional. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)

.1 Temporary Modifications

a. Inspection Scope

The inspectors evaluated a modification to the reactor building crane control system implemented by engineering change (EC) 47998, "Reactor Building Crane Control Upgrade." The inspectors verified that the design bases, licensing bases, and

performance capability of the crane were not degraded by the modification. In particular, the inspectors reviewed Entergy's license commitments and NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," submittals and compared them to the 10 CFR 50.59 screening form. The inspectors reviewed modification documents associated with the upgrade and design change, including replacement of the motor-generator sets and direct current drive motors with digital drives and other control system changes. The inspectors reviewed the factory acceptance testing and on site test procedures to ensure Entergy appropriately tested all affected components. The inspectors also interviewed engineering personnel regarding the modification.

b. Findings

Introduction. The inspectors identified a finding of very low safety significance (Green) and an associated Severity Level IV NCV of 10 CFR 50.59 when Entergy made changes to the reactor building crane that resulted in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. Specifically, Entergy did not recognize that they had removed redundancy from the control system needed to qualify the crane as single failure proof.

Description. NUREG-0612 includes protection against "two blocking" among the requirements for single-failure proof cranes. Two blocking occurs when the load block is raised so high that it contacts the hoist block, and can result in breaking the wire ropes and a load drop. Entergy has committed to meeting the requirements of NUREG-0612, or a similar NRC-approved requirement, when lifting heavy loads near the spent fuel pool in order to prevent a load drop that would damage the fuel assemblies.

On August 12, Entergy began post-modification testing for EC 47998, which upgraded the controls on the reactor building crane, which is used for heavy load lifts during refueling outages and transfer of spent fuel to dry casks. Among other changes, this EC changed the drives on the main and auxiliary hoists from motor-generator sets to digital drives.

The previous design protected against two blocking by using diverse upper travel limits that would actuate redundant relays. These relays were connected to the "suicide field" circuit in parallel. If either one actuated as a result of the load block hitting the upper travel limit, the suicide field circuit would be completed and the direct current motor would not be able to move either up or down, preventing a load drop. Additionally, these same relays provided signals to set the hoist brakes. The NRC approved this design under the safety evaluation for technical specification amendment 29 as acceptable protection against two blocking.

The design for the new controls under EC 47998 did not preserve the independence of the upper travel limits. The two redundant relays were connected in series to an input on the digital drive controller. If either one actuated as a result of hitting the upper travel limit, the controller would receive a signal that the limit had been reached, and would follow its programming to trip the motor and send redundant signals to set the hoist brakes. However, a single failure of the digital controller's input buffer, or of the digital controller itself, could remove all protection against two blocking. The screening done to meet the requirements of 10 CFR 50.59 did not discuss the lack of redundancy, and therefore, Entergy did not recognize that the change would require review and approval

by the NRC before the crane could be used in an application that required it to be single failure proof.

Simmers, a contracted crane company, performed the design of the new crane control system. The design underwent several changes during the development process, and Entergy did not do a thorough review of the final design in order to identify the weaknesses. The inspectors identified the inadequate protection against two blocking and informed Entergy staff of the issue. Entergy initiated CR-VTY-2014-03028 and entered the issue into the corrective action program.

On August 21, Entergy completed modifications to the crane under engineering change notice (ECN) 51333 and ECN 52469 and restored the independence of the redundant upper travel limits. With the completed modifications, the output from the redundant relays feeds into two input buffers on the digital drive controller and provides a signal to set the brakes as long as the crane operator is not driving the hoist down. No lifts were performed by the crane while the inadequate protection against two blocking was installed. Additionally, the crane was not operated over the spent fuel pool.

Analysis. The inspectors determined that the failure to properly screen the change was within Entergy's ability to foresee and correct and therefore should have been prevented and was a performance deficiency. Specifically, Entergy failed to evaluate whether the new design removed required redundancy and therefore could not be performed under 10 CFR 50.59.

The inspectors determined that the finding was more than minor because the change would have required NRC review and approval in order to qualify the crane as single-failure proof. Additionally, this finding was associated with the design control attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers (e.g. fuel cladding) protect the public from radionuclide releases caused by accidents or events. Specifically, the design change increased the likelihood of a heavy load drop, which could have impacted the fuel in the spent fuel pool.

This issue impeded the ability of the NRC to perform its regulatory oversight function, because the failure to follow the requirements in 10 CFR 50.59, "Changes, Tests and Experiments," resulted in Entergy not submitting the change to the NRC for approval. Therefore, the enforcement aspects of this finding were processed using the Traditional Enforcement process.

This violation is associated with a finding that has been evaluated by the SDP and communicated with an SDP color reflective of the safety impact of the deficient licensee performance. The SDP, however, does not specifically consider the regulatory process impact. Thus, although related to a common regulatory concern, it is necessary to address the violation and finding using different processes to correctly reflect both the regulatory importance of the violation and the safety significance of the associated finding

The inspectors evaluated this finding using IMC 0609, Attachment 4, "Initial Characterization of Findings." The inspectors determined that the finding affected the Barrier Integrity cornerstone and evaluated the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 3, "Barrier

Integrity Screening Questions.” The inspectors determined the finding was of very low safety significance (Green) because the crane was not operated over the spent fuel pool, nor was there an actual load drop.

Per Subsection d.2 of Section 6.1, “Reactor Operations,” of the NRC Enforcement Policy, this is a Severity Level IV violation, because it is a 10 CFR 50.59 violation that results in conditions evaluated as having very low safety significance by the SDP.

This finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because Entergy did not avoid complacency on the review of this design by recognizing and planning for the possibility of latent issues. The 50.59 screening was not reviewed to ensure it fully captured the final design from the vendor, and as a result, the vulnerability introduced by the digital controller was not considered. [H.12]

Enforcement. 10 CFR 50.59(c)(2) states, in part, that a licensee shall obtain a license amendment prior to implementing a proposed change that results in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. Contrary to this, on August 12, Entergy returned the reactor building crane to use after implementing a change to the control system that removed required redundancy, increasing the likelihood of occurrence of a malfunction that could result in damage to spent fuel. Entergy restored compliance by completing modifications to the crane that restored the independence of the redundant upper travel limits. Because this violation was of very low safety significance and was entered into the corrective action program (CR-VTY-2014-03028), this violation is being treated as an NCV, consistent with Section 2.3.2.a of the Enforcement Policy. **(NCV 05000271/2014004-02, Failure to Submit Reactor Building Crane Digital Control System Modification for Approval)**

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.

- SBO diesel generator lube oil filter replacement in accordance with a vendor service letter on July 22
- ‘B’ and ‘D’ drywell-to-torus vacuum breaker counterweight adjustments on August 13
- ‘B’ control rod drive pump preventive replacements of oil and suction filters on August 19
- ‘B’ instrument air dryer preventive and corrective maintenance on August 8
- SBO diesel generator post-maintenance test following general maintenance on September 16

- Torus-to-Drywell vacuum breakers' testing following the high pressure coolant injection system quarterly surveillance on September 17

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 7 samples)

a. Inspection Scope

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

- Reactor water low level scram isolation functional test on July 7
- 'A' EDG jacket water monthly chemistry sample on July 28
- Reactor core isolation cooling quarterly surveillance on August 6 (in-service test)
- 'B' EDG 18-month, eight hour run surveillance on August 11
- 'A' EDG semi-annual fast start and 18-month, eight hour run surveillances on August 25
- Reactor coolant system leakage detection surveillance on September 26
- 'B' EDG fast start operability test to ensure no common cause failure on September 30

b. Findings

No findings were identified.

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). During this inspection, the inspectors conducted a review of the VY siren and tone alert radio testing and maintenance programs. The inspectors reviewed the associated ANS procedures and the Federal Emergency Management Agency approved ANS Design Report to ensure compliance with design report commitments for system maintenance and testing. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 2. 10 CFR 50.47(b)(5)

and the related requirements of 10 CFR Part 50, Appendix E, 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 the VY 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 in a timely manner. The inspectors reviewed the VY Emergency Plan for emergency response facilities' activation and ERO staffing requirements, the ERO duty roster, applicable station procedures, augmentation test reports, the most recent drive-in drill reports, and corrective action reports related to this inspection area. The inspectors also reviewed a sample of ERO responder training records to verify training and qualifications were up to date. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 3. 10 CFR 50.47(b) (2) and related requirements of 10 CFR Part 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04 – 1 sample)

a. Inspection Scope

Entergy implemented various changes to the VY Emergency Action Levels (EALs), Emergency Plan, and Implementing Procedures. Entergy had determined that, in accordance with 10 CFR 50.54(q)(3), any change made to the EALs, Emergency Plan, and its lower-tier implementing procedures, had not resulted in any reduction in effectiveness of the Plan, and that the revised Plan continued to meet the standards in 50.47(b) and the requirements of 10 CFR 50 Appendix E.

The inspectors performed an in-office review of all EAL and Emergency Plan changes submitted by Entergy as required by 10 CFR 50.54(q)(5), including the changes to lower-tier emergency plan implementing procedures, to evaluate for any potential reductions in effectiveness of the Emergency Plan. This review by the inspectors was not documented in an NRC Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. The requirements in 10 CFR 50.54(q) 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 (EP) program. The inspectors reviewed: memorandums of agreement with offsite agencies; the 10 CFR 50.54(q) Emergency Plan change process and practice; VY's maintenance of equipment important to EP; records of evacuation time estimate population evaluation; and provisions for, and implementation of, primary, backup, and alternative emergency response facility maintenance. The inspectors also verified Entergy's compliance at VY with new NRC EP regulations regarding: EALs for hostile action events; protective actions for on-site personnel during events; emergency declaration timeliness; ERO augmentation and alternate facility capability; evacuation time estimate updates; on-shift ERO staffing analysis; and ANS back-up means.

The inspectors further evaluated Entergy's ability to maintain VY's EP program through their identification and correction of EP weaknesses, by reviewing a sample of drill reports, an actual event report, self-assessments, and 10 CFR 50.54(t) reviews. Also, the inspectors reviewed a sample of EP-related CRs initiated at VY from September 2012 through July 2014. 10 CFR 50.47(b) and the related requirements of 10 CFR Part 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES4OA1 Performance Indicator Verification (71151).1 Mitigating Systems Performance Index (3 samples)a. Inspection Scope

The inspectors reviewed Entergy's submittal of the Mitigating Systems Performance Index for the following systems for the period of October 1, 2013 through September 30, 2014.

- Emergency alternating current (AC) Power System
- RHR System
- Cooling Water System

b. Findings

No findings were identified.

.2 Drill/Exercise Performance, ERO Drill Participation, and ANS Reliability (3 samples)

a. Inspection Scope

The inspectors reviewed data for the following three EP performance indicators: (1) drill and exercise performance; (2) ERO drill participation; and (3) ANS reliability. The last NRC EP inspection at VY was conducted in the second calendar quarter of 2013. Therefore, the inspectors reviewed supporting documentation from EP drills and equipment tests from the second calendar quarter of 2013 through the second calendar quarter of 2014 to verify the accuracy of the reported performance indicator data. The review of the performance indicators was conducted in accordance with Inspection Procedure 71151. The acceptance criteria documented in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 7, were used as reference criteria.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 5 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

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

b. Findings

No findings were identified.

.2 Annual Sample: 'A' Standby Gas Treatment Exhaust Fan Failure to Start

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's apparent cause analysis and corrective actions associated with CR-VTY-2013-06257, documenting the failure of the 'A' standby gas treatment exhaust fan to start. Specifically, when Entergy personnel were attempting to perform a secondary containment capability check using 'A' standby gas treatment, the exhaust fan failed to start and run.

The inspectors assessed Entergy's problem identification threshold, cause analyses, extent of condition reviews, and the prioritization and timeliness of Entergy's corrective

actions to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Entergy's corrective action program and 10 CFR 50, Appendix B. In addition, the inspectors performed field walkdowns and interviewed engineering personnel to assess the effectiveness of the implemented corrective actions.

b. Findings and Observations

A licensee-identified violation was identified. The enforcement aspects of this issue are discussed in section 4OA7.

On October 30, 2013, the 'A' standby gas treatment exhaust fan failed to start following planned maintenance on the 'A' standby gas treatment demister. Entergy had successfully completed post-maintenance testing of the associated valves and was proceeding to perform a secondary containment capability check utilizing 'A' standby gas treatment.

When personnel attempted to start the exhaust fan the stop light dimmed for approximately two seconds and then extinguished with no indication of the fan running. When dispatched locally, operators noticed that the drive belts were spinning slowly and the fan was attempting to start with the standby heaters cycling on and off approximately every three seconds. In addition, control room personnel observed the stop light for the fan cycling every three seconds in conjunction with the heaters.

Entergy personnel discovered that a 16 ohm (low impedance) ground existed across the secondary winding of the control power transformer. The source of the ground was subsequently traced to one of the three contactor auxiliary switches configured with two isolated normally closed (NC) contact sets (labeled L56C). One NC contact set powered the 'A' standby gas treatment electric heater, and the second NC contact set was connected in the cubicle control circuit. Inspection of the contacts supplying the heater revealed that one of the contacts had catastrophically failed. Further examination of the auxiliary switch revealed that the two common terminals on the isolated contact sets were shorted to each other, electrically bridging the electric heater across the secondary winding of the control power transformer. This electrical short resulted in overloading the 1 ampere (A) cubicle control circuit resulting in the failure of the fan to start and run. When requisitioning a replacement L-56 auxiliary switch Entergy personnel noted that the data sheet supplied with the switch listed a contact rating of 3 A continuous and questioned the ability of this switch to handle the load of the electric heater (approximately 8 A). Based on this observation, Entergy decided to use a higher current version of the auxiliary switch ('J' Type) which was designed to replace the L-56 type which was used in original plant construction. The Type J family has a higher control circuit contact rating (10 A) along with other improvements. Entergy personnel replaced the switch and successfully completed post-maintenance and surveillance testing. The failure of the switch resulted in approximately 48 hours unplanned unavailability of 'A' standby gas treatment.

Entergy performed an extent of condition review and found the same L-56 auxiliary switch installed in the 'B' standby gas treatment cubicle powering the electric heater (same as 'A' subsystem) and corrected the condition by installing the higher current rated switch on November 13, 2013. Entergy personnel also reviewed all motor control

center cubicle wiring diagrams to identify any additional instances of misapplication of the L-56 auxiliary switch. The review encompassed all 17 volumes of control wiring diagrams and also included a review of heater circuits in general that rely on the use of auxiliary contacts to power the heaters. Entergy completed the review on November 14, 2013. No additional occurrences of inadequate circuit design were identified.

The inspectors reviewed the wiring diagrams, component specifications, and work orders and did not identify any additional issues. The inspectors determined Entergy's overall response to the issue was commensurate with the safety significance, was timely, and included appropriate compensatory actions. The inspectors determined that the actions taken were reasonable to resolve both the initial failure and ensure sufficient extent of condition review to prevent recurrence.

.3 Annual Sample: Some Lower-Tier Apparent Cause Evaluations Not Adequate

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's apparent cause analysis and corrective actions associated with CR-VTY-2013-04192. This CR was written to determine why some lower-tier apparent cause evaluations (LT-ACEs) were not meeting the procedural standards. In Inspection Report 05000271/2013008 (ML13212A119), the inspectors documented two minor violations in which causal evaluations did not demonstrate that the causes were well understood and the corrective actions were adequate, contrary to procedure EN-LI-119, "Apparent Cause Evaluation Process." An internal assessment performed by Entergy staff had similar results.

On September 30, 2013, Entergy implemented a new fleet-wide procedure which eliminated LT-ACEs and replaced them with equipment ACEs, ACEs, and Level 1 Human Performance Evaluations (HUEs). Each of the three has its own format, but all function to determine apparent and contributing causes of a condition adverse to quality.

The inspectors reviewed the ACE associated with CR-VTY-2013-04192 and Entergy's effectiveness review of their corrective actions and compared it to Entergy's corrective action program requirements and the requirements in 10 CFR 50, Appendix B. From January 1, 2014 to June 30, 2014, Entergy performed 14 ACEs that did not require corrective action review board (CARB) review, including six equipment ACEs, six HUEs, and two ACEs. The inspectors compared a sample of four of the equipment ACEs and all six of the HUEs to the requirements in EN-LI-118, "Cause Evaluation Process."

b. Findings and Observations

No findings were identified.

Entergy's ACE determined that LT-ACEs that were not reviewed by the CARB were sometimes inadequate because neither the individuals performing the causal evaluation, nor the managers approving them, had any formal qualifications for the work. Their corrective actions included adding assigned corrective actions to each LT-ACE to require a pre-job brief with corrective action and assessment (CA&A) department staff and to require a CA&A mentor for each LT-ACE. These actions were completed on August 18, 2013.

In reviewing the six HUEs performed in 2014, the inspectors noted that all of them lacked the direction to have a pre-job brief with CA&A and to have a CA&A mentor for the person performing the evaluation. The inspectors discussed this with the performance improvement manager, who confirmed that Entergy should have implemented those corrective actions for the HUEs. Entergy documented this in CR-VTY-2014-02701 and implemented the corrective actions. The inspectors noted that all four equipment ACEs reviewed included corrective actions to require CA&A participation in the pre-job brief and a CA&A mentor.

The inspectors noted some deficiencies in some of the causal evaluations. In two of the HUEs, there were weaknesses in the documentation that had not been corrected during the close out review. A third HUE also had weaknesses, but CA&A had not yet performed their close out review prior to the inspection. Subsequent inspection showed that the close out review identified the same issues independently. One equipment ACE did not appropriately capture all causes of the condition. Two equipment ACEs also recommended delaying corrective actions due to the decision to permanently cease operation. Neither included proof that the delay had been approved using one of the acceptable processes for canceling work due to the planned plant shutdown. These observations were documented in CR-VTY-2014-02738. The remaining five causal evaluations reviewed adequately met all procedural requirements.

Upon reviewing the guidance for performing a level 1 HUE contained in EN-LI-118, the inspectors identified that the guidance did not match the flow chart in "Human Performance Culpability Evaluations", the basis document for creating the guidance. Entergy documented this in CR-HQN-2014-00562, because this was a fleet guidance document, and also initiated CR-VTY-2014-02633 to verify that the incorrect guidance had not negatively impacted evaluations previously performed at VY.

.4 Annual Sample: Engineering Rigor and Performance as the Shutdown Approaches

a. Inspection Scope

The inspectors performed an in-depth review of recent engineering products based on Entergy's planned shutdown of VY in December 2014. The inspectors assessed engineering's problem identification threshold, cause analyses, extent-of-condition reviews, compensatory actions, and the prioritization and timeliness of corrective actions to evaluate whether engineering was appropriately identifying, characterizing, and correcting problems associated with conditions adverse to quality and whether the deferred and/or completed corrective actions were appropriate. The inspectors reviewed system health and walkdown reports, corrective action program metrics, Maintenance Rule action plans and Expert Panel meeting minutes, deferred work risk assessments, operability determinations, interim and periodic corrective action reviews, and periodic trend reports to assess engineering performance and decision-making. The inspectors compared the actions taken to the requirements of Entergy's corrective action program, 10 CFR 50 Appendix B, the Maintenance Rule, and Entergy's engineering standards.

The inspectors interviewed operations and engineering personnel to gain an understanding of engineering challenges, workload balance, system monitoring and trending, preventive maintenance and corrective action deferrals, engineering backlog, work environment, and engineering performance. The inspectors reviewed corrective action CRs to confirm that Entergy appropriately identified and resolved any observed

deficiencies or adverse trends. In addition, the inspectors performed several walkdowns throughout the plant, including control room instrumentation panels, to independently assess the material condition, use of temporary modifications, and configuration control.

b. Findings and Observations

No findings were identified.

Based on the documents reviewed, control room and plant walkdowns, and discussions with engineering and operations personnel, the inspectors noted that engineering identified problems and entered them into the corrective action program at a low threshold. Based on the samples reviewed, the inspectors determined that engineering trended equipment and programmatic issues and appropriately identified problems in CRs. The inspectors determined that engineering appropriately prioritized and evaluated issues commensurate with the safety significance of the identified problem. Engineering applied sufficient rigor in their work deferral and interim corrective action reviews, including obtaining appropriate and timely management approval, and consistently documented their decisions in accordance with Entergy's corrective action program and engineering standards and implementing procedures. The inspectors concluded that engineering personnel remained focused on nuclear and personnel safety, adequately performed day-to-day engineering tasks, appropriately engaged the corrective action program, and consistently applied established processes in their decision-making. In response to several minor equipment deficiencies identified by the inspectors during plant walkdowns, Entergy personnel promptly initiated CRs and/or took immediate action to address the issues.

.5 Annual Sample: Preventive Maintenance Program Task Deferrals

a. Inspection Scope

The inspectors reviewed Entergy's actions to resolve seven issues collectively documented in CR-VTY-2013-03150 and individual CRs with assigned corrective actions included by reference. The issues involved the approval of preventative maintenance task deferrals not in accordance with Entergy's process guidance and incorrect deferral of some preventive maintenance tasks reported by CR-VTY-2013-03150. The issues were identified and documented by Entergy staff in Quality Assurance Surveillance Report QS-2013-VTY-0007.

Upon discovery of these nonconforming conditions, Entergy staff performed an ACE which determined that the issues were the result of not following the requirements of Entergy procedure EN-DC-324, "Preventive Maintenance Program," Revision 8.

The inspectors reviewed the ACE and the corrective actions implemented under CR-VTY-2013-03150 and compared the actions taken to the requirements of Entergy's corrective action program and 10 CFR Part 50, Appendix B., and to the corrective program attributes described in Inspection Procedure 71152, "Identification and Resolution of Problems."

b. Findings and Observations

No findings were identified.

The inspectors determined that Entergy staff performed an accurate identification of the problem in a timely manner commensurate with the issue's safety significance. The inspectors also determined that Entergy staff had, upon determination of the apparent cause, concluded that operability of the affected equipment was not impacted and the conditions were not reportable to the NRC because the deferral of the tasks had not been identified as affecting equipment performance.

The inspectors reviewed the changes made in preventive maintenance deferrals which had not been processed in accordance with Entergy's procedure guidelines. Entergy staff issued revised preventive maintenance documents which met the provisions of the current revision (Revision 8) of the procedure. To investigate the extent of this condition, Entergy staff reviewed all preventive maintenances that included deferrals which had been performed in the previous 3 years. During this examination, Entergy staff did not identify any additional instances of preventive maintenance deferrals not meeting the process requirements during the 3 year period. The inspectors determined that this provided reasonable assurance that no other maintenance tasks had been inadvertently, incorrectly deferred.

The inspectors reviewed the most recent revision (Revision 8) of procedure EN-DC-324 which was effective on June 4, 2012. The inspectors observed that Entergy staff was notified of the procedure revision by internal electronic notification. The inspectors noted that Entergy's ACE did not include a discussion of the adequacy of communication with their staff regarding this procedure revision and whether the number of changes warranted training. Notwithstanding, the inspectors concluded the extent of condition review by Entergy staff determined no safety-related or non-safety-related preventive maintenance tasks had been missed and equipment operability and functionality remained unaffected.

.6 Annual Sample: Containment Isolation Valve V20-83 Failure

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's ACE and corrective actions associated with CR-VTY-2013-05763, "Repair of V20-83 Indicates Probable Inadequate RFO30 Actuator Rebuild." Specifically, an inadequately performed refurbishment of the AOV actuator for the drywell floor drain sump isolation valve resulted in the valve failing its quarterly surveillance test by closing slower than the maximum allowed stroke time. The valve functions as an outboard containment isolation valve and must meet the required closure time or be declared inoperable.

The inspectors reviewed documentation of the problem to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Entergy's corrective action program and 10 CFR 50, Appendix B. In addition, the inspectors interviewed engineering personnel to assess the effectiveness of the implemented corrective actions.

b. Findings

Introduction. The inspectors identified a self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Entergy did not properly implement the prescribed maintenance instructions during the refurbishment of the AOV actuator for valve V20-83.

Description. On September 27, 2013, Entergy staff performed the quarterly surveillance test to stroke time the drywell floor drain sump outboard isolation valve (V20-83). This valve stroked slowly in the closed direction taking 8 seconds. The valve was retested later the same day and took approximately 13 seconds to close, which again exceeded the maximum acceptable closure stroke time of 3.51 seconds. Based on the longer stroke times, Entergy operations staff declared V20-83 inoperable, rebuilt the valve, and evaluated the causes of the problem.

Valve V20-83 is a three-inch air-operated ball type valve with a Bettis type actuator, which is normally open to provide a flow path for the drywell floor drain pumps to the floor drain collector tank TK-15-1A for monitoring of reactor coolant unidentified leakage. The valve functions as a Group 2 Primary Containment Isolation System valve and is required to be operable per VY Technical Specification 3.7.D.

Entergy determined the direct cause of the problem was the failure of the air-operator to stroke effectively, which was supported by the slow stroke time associated with the actuator once it was removed from the valve. Entergy's evaluation determined the likely cause of the problem was the use of incorrect grease during refurbishment in refueling outage 30 on March 23, 2013. Based on the evidence contained in the interview notes with maintenance personnel obtained after the rebuild on September 28, 2013, Bettis ESL-5 grease (reddish in color) was used in the refurbishment performed in refueling outage 30, contrary to the required Dow Corning Molykote 44 (light yellow in color) that was specified in the equipment manual. The application of this petroleum-based lubricant (e.g. Bettis ESL-5) to the Ethylene-Propylene (E-P) elastomer seals in V20-83 caused a condition where the seal swelled, increasing the friction between the piston and cylinder in the actuator, and resulted in the actuator stroking more slowly.

Entergy determined that their staff did not follow work order instructions in accordance with the Vermont Yankee Equipment Manual (VYEM). The work order instructed the worker to perform actuator refurbishment per VYEM 0091, "GH Bettis Pneumatic Actuators Instruction Manual," and referred to pages 4-105 through 4-114. On page 4 -106, VYEM 0091 stated to use Dow Corning Molykote 44 grease for lubrication.

Entergy's extent of condition review was limited to the population of nuclear series Bettis type actuators installed at VY. The review identified three additional AOV actuators that use the E-P elastomer seals susceptible to swelling due to interaction with petroleum-based lubricants; however, only one had been identified as being recently rebuilt with the possible wrong grease. Corrective actions included rebuilding the susceptible valves with the correct grease, adding the grease to each valve's bill of materials, and adding a caution note in the refurbishment work order template to ensure the use of the specific grease for lubrication of the rubber seals.

Analysis. The inspectors determined that the failure to properly implement the prescribed maintenance instructions in VYEM 0091 during the refurbishment of valve

V20-83 was reasonably within Entergy's ability to foresee and correct and therefore should have been prevented and was a performance deficiency. This finding is more than minor because it is associated with the SSC and barrier performance attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (e.g., containment) protect the public from radionuclide releases caused by accidents or events. Specifically, when tested, the valve exceeded the maximum allowable stroke time for closure and was declared inoperable. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 3 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because it was associated with the functionality of the reactor containment but did not represent an actual open pathway in the physical integrity of containment, containment isolation system, and heat removal components.

This finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Entergy personnel did not properly implement the requirements prescribed in the maintenance instructions. Specifically, during the refurbishment of the valve's actuator, Entergy staff did not use the lubricant that was specified in the equipment manual referenced in the work order. [H.8]

Enforcement. 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, on March 23, 2013, Entergy was performing an activity affecting quality and failed to accomplish the prescribed maintenance instructions during the refurbishment of valve V20-83. Specifically, Entergy used a lubricant other than the type specified in VYEM 0091, which was incompatible with the seals in the valve. Entergy's immediate corrective actions to restore compliance included performing a rebuild of the valve using the correct grease. Because this violation was of very low safety significance and was entered into the corrective action program (CR-VTY-2013-05763), this violation is being treated as an NCV, consistent with Section 2.3.2.a of the Enforcement Policy. **(NCV 05000271/2014004-03, Failure to Follow Procedure Results in Inoperable Containment Isolation Valve)**

c. **Observations**

The inspectors concluded that Entergy staff conducted an appropriate technical review of the degraded valve that included interviews with maintenance personnel and discussions with the valve manufacturer. The inspectors also concluded that Entergy staff identified the extent of the problem. Three additional AOV actuators were determined to have rubber seals susceptible to swelling due to interaction with petroleum-based lubricants; however, only one had been identified as being recently rebuilt with the possible wrong grease. Corrective actions included rebuilding the susceptible valves with the correct grease, adding the grease to each valve's bill of materials, and adding a caution note in the refurbishment work order template to ensure the use of the specific grease for lubrication of the rubber seals.

The inspectors reviewed maintenance records and did not identify any additional issues. The inspectors determined Entergy's overall response to the issue was commensurate with the safety significance, was timely, and included appropriate compensatory actions.

The inspectors determined that the actions taken were reasonable to correct the problem and prevent reoccurrence during future maintenance activities.

4OA6 Meetings, Including Exit

On October 7, 2014, the inspectors presented the inspection results to Mr. Christopher Wamser, Site Vice President, and other members of the Entergy staff who acknowledged the inspection results. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by Entergy and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

- 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that the design basis is correctly translated into specifications. Contrary to the above, the design basis was not correctly translated into specifications in that the specified current rating for electrical switches supplying electric heaters in the standby gas treatment system were less than the designed circuit amperage from original plant construction, February 28, 1973, until November 13, 2013. Entergy identified that the standby gas treatment auxiliary switches supplying the charcoal bed heaters in both 'A' and 'B' subsystems were rated for a continuous current of 3 A when the continuous current was approximately 8 A. Entergy entered this issue into the corrective action program as CR-VTY-2013-06257. The inspectors determined that the finding was of very low safety significance (Green) in accordance with IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," because the finding only represented a degradation of the radiological barrier function provided for the standby gas treatment system.

ATTACHMENT: SUPPLEMENTARY INFORMATION

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

C. Wamser, Site Vice President
 V. Fallacara, General Manager of Plant Operations
 M. Romeo, Director of Regulatory and Performance Improvement
 J. Boyle, Engineering Director
 R. Busick, Operations Manager
 R. Felumb, Performance Improvement Manager
 P. Corbett, Nuclear Oversight Manager
 M. McKenney, Emergency Preparedness Manager
 P. Ryan, Security Manager
 K. Stupak, Manager, Training and Development
 D. Tkatch, Radiation Protection Manager
 C. Chappell, Regulatory Assurance Manager
 M. Jurkowski, Mechanical Maintenance Supervisor
 C. Tabone, Control Room Supervisor
 J. Merkle, System Engineering Manager
 J. Rogers, Design Engineering Manager
 J. Calchera, Engineering Supervisor
 J. Laughney, QA Supervisor
 J. Taylor, Operations Training Superintendent
 B. O'Callahan, AOV Engineer
 R. Scherman, Component Engineer
 W. Pelzer, IST Engineer
 R. Orner, Senior Engineer
 A. Robertshaw, Senior Engineer
 H. Breite, Senior Engineer

LIST OF ITEMS OPENED, CLOSED, DISCUSSED AND UPDATEDOpened/Closed

05000271/2014004-01	NCV	Failures to Promptly Identify Through-Wall Leakage from Service Water Piping to the Emergency Diesel Generators
05000271/2014004-02	NCV	Failure to Submit Reactor Building Crane Digital Control System Modification for Approval
05000271/2014004-03	NCV	Failure to Follow Procedure Results in Inoperable Containment Isolation Valve

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
 Vermont Yankee Nuclear Power Station Equipment Out of Service (EOOS) Risk Model
 Vermont Yankee Nuclear Power Station Workweek Schedules

Section 1R04: Equipment Alignment

Procedures

OPOP-RHR-2124, "Residual Heat Removal System," Revision 11
 OPOP-SBO-10066, "Station Blackout Diesel Generator," Revision 3
 OPOP-SBO-10067-07, "Station Blackout Diesel Generator Local Start Surveillance (Annually),"
 Revision 3
 OPSP-SBO-10067-01, "Monthly Station Blackout Diesel Generator Load Bank Test," Revision 5
 EN-CS-S-008-MULTI, "Pipe Wall Thinning Structural Evaluation," Revision 0
 EN-LI-102, "Corrective Action Process," Revision 23
 CEP-NDE-0505, "Ultrasonic Thickness Examination," Revision 4
 EN-MA-133, "Control of Scaffolding," Revision 11

Condition Reports

CR-VTY-2014-02590	CR-VTY-2014-02842	CR-VTY-2014-03140
CR-VTY-2014-02652	CR-VTY-2014-02865	
CR-VTY-2014-02707	CR-VTY-2014-02881	

Drawings

G-191159, Sheet 2, "Flow Diagram Service Water System," Revision 97
 G-191172, "Flow Diagram Residual Heat Removal System," Revision 74
 ISI-SW-PART-12, Sheet 2, "Service Water Turbine Building," Revision 2
 ISI-SW-PART-14, Sheet 3, "Turbine Building and CST/SW Trenches," Revision 0
 ISI-SW-PART-13, Sheet 2, "Service Water Diesel Generator Room," Revision 3
 ISI-SW-PART-14, Sheet 2, "Service Water Diesel Generator Room," Revision 4
 ISI-SW-PART-13, Sheet 1, "Service Water System," Revision 2
 ISI-SW-PART-14, Sheet 1, "Service Water System," Revision 1
 ISI-SW-PART-12, Sheet 1, "Service Water Turbine Building," Revision 1
 ISI-SW-PART-10, Sheet 4, "Service Water Reactor Building," Revision 4
 ISI-SW-PART-4, Sheet 1, "Service Water Torus Catwalk," Revision 2
 ISI-SW-PART-4, Sheet 2, "Service Water Torus Catwalk," Revision 4

UT Erosion/Corrosion Examination Reports

VY-BOP-14-UT-033	VY-BOP-14-UT-039	VY-BOP-14-UT-045
VY-BOP-14-UT-034	VY-BOP-14-UT-040	VY-BOP-14-UT-046
VY-BOP-14-UT-035	VY-BOP-14-UT-041	VY-BOP-14-UT-047
VY-BOP-14-UT-036	VY-BOP-14-UT-042	VY-BOP-14-UT-049
VY-BOP-14-UT-037	VY-BOP-14-UT-043	VY-BOP-14-UT-050
VY-BOP-14-UT-038	VY-BOP-14-UT-044	VY-BOP-14-UT-051

Miscellaneous

EN-MA-133, Attachment 9.5, "Engineering Evaluation Request – Scaffold LT-063," completed 4/10/12

EN-MA-133, Attachment 9.5, "Engineering Evaluation Request – Scaffold LT-035," completed 3/12/09

EXEV, "Topical Design Basis Document for External Events," Revision 2

SWSYS, "Design Basis Document for Service Water, Residual Heat Removal Service Water, Alternate Cooling Systems," Revision 32

VYC-3080, "ASME Code Case N-513 Evaluations of Extent of Condition UT Examination Reports for Service Water Supply and Lines for SFPCS Heat Exchangers," Revision 3

VYC-0526, "Problem No. 119 SRP Reanalysis for EDCR 84-02," Revision 1

SEP-ISI-VTY-001, "VY Fifth Ten-Year Interval Inservice Inspection (ISI) Program Plan," Revision 8

VYC-3189, "SW Piping to EDG CC N-513 Augmented Exams Evaluation," Revision 0

Section 1R05: Fire Protection

Pre-Fire Plans

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

Condition Reports

CR-VTY-2014-03388

Miscellaneous

"Fire Hazards Analysis," Revision 14

Section 1R07A: Heat Sink Performance

Condition Reports

CR-VTY-2014-02492

Miscellaneous

Heat Exchanger Tube Data Sheets, 07/02/14

Heat Exchanger Inspection Database, 07/02/14

Reactor Building Closed Cooling Water System Health Report, Q1-2014

Section 1R11: Licensed Operator Regualification Program

Condition Reports

CR-VTY-2012-05879

CR-VTY-2013-01099

CR-VTY-2013-06357

CR-VTY-2013-00501

CR-VTY-2013-01718

CR-VTY-2014-03188

CR-VTY-2013-00865

CR-VTY-2013-01777

Procedures

2013 LOR Biennial Written Exam Sample Plan

2014 LOR Annual Operating Exam Sample Plan

EN-TQ-114, "Licensed Operator Regualification Training Program Description," Revision 9

EN-TQ-217, "Examination Security," Revision 4

EN-NS-112, "Medical Program," Revision 13

EN-FAP-OP-010, "Component Misposition Performance Indication," Revision 1

EN-FAP-OP-008, "Reactivity Management Performance Indicator Program," Revision 3
 EN-FAP-OM-012, "Prompt Investigation, Notifications and Duty Manager Responsibilities,"
 Revision 5
 EN-LI-108, "Event Notification and Reporting," Revision 10
 OT 3113, "Reactor Low Level," Revision 23
 OT 3110, "Positive Reactivity Insertions," Revision 25

Job Performance Measures

20019 20053 29914 20510 29906 24509 26304
 20015 26201 20207 21708 20048 26207 25909
 29502 26210 26410

Comprehensive Written Exams (Previously administered in Oct. and Nov. 2013)

2013 Week 1 SRO 2013 Week 5 SRO
 2013 Week 2 SRO

Simulator Scenarios

SEG-10	SEG-11	SEG-14	SEG-19
SEG-42	SEG-48	SEG-51	SEG-53
SEG-55	SEG-57		

Simulator Performance Tests

SES-2009-03
 SES-2010-14
 SES-2010-15

Section 1R12: Maintenance Effectiveness

Procedures

OPST-EDG-4126-11A, "A EDG Alternate Cooling Line Flush," Revision 1
 OPOP-4KV-2142, "4kV Electrical System," Revision 7
 OPOT-3122-02, "Station Blackout," Revision 4
 ON 3148, "Loss of Service Water," Revision 18

Condition Reports

CR-VTY-2009-03770	CR-VTY-2012-01963	CR-VTY-2013-01055
CR-VTY-2011-05598	CR-VTY-2012-03432	CR-VTY-2013-01056
CR-VTY-2012-00142	CR-VTY-2012-03740	CR-VTY-2013-01126
CR-VTY-2012-00144	CR-VTY-2012-05272	CR-VTY-2013-05788
CR-VTY-2012-00822	CR-VTY-2012-06084	CR-VTY-2013-06711
CR-VTY-2012-01758	CR-VTY-2013-00955	CR-VTY-2014-00774

Work Orders

WO 00302749, "V19-13B; Disassemble Check Valve and Repair Seat Leak"
 WO 00343667, "V19-13B; Disassemble and Repair Valve (Valve Sticks Open)"

Miscellaneous

ACS, "10CFR50.65 Maintenance Rule Scoping Basis Document Alternate Cooling (ACS),"
 Revision 3
 RHRSW, "10CFR50.65 Maintenance Scoping Basis Document RHR Service Water (RHRSW),"
 Revision 5

CW, "10CFR50.65 Maintenance Rule Scoping Basis Document Circulating Water (CW),"
Revision 3
Fuel Pool Cooling System Health Report, Q4-2013
Fuel Pool Cooling Maintenance Rule State of the System Report, 7/31/14

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

OP 4105, "Fire Protection Systems Surveillance," Revision 54
AP 0172, "Work Schedule Risk Management and On Line," Revision 27
EN-OP-119, "Protected Equipment Postings," Revision 6
OP 4379, "Drywell/Torus Differential Pressure Functional/Calibration," Revision 26
OP 4363, "HPCI Suction Transfer on Condensate Storage Tank (CST) Low Level Functional
Test and CST Level Instrumentation Calibration," Revision 33
OP 4319, "Reactor Protection System – First Stage Turbine Pressure Functional/Calibration,"
Revision 31
OPST-RHR-4124-16B, "RHRSW Pump B/D Maintenance/Performance Improvement Run,"
Revision 3
OPST-RHR-4124-01A, "Maintenance of Filled RHR Loop A Discharge Piping," Revision 3

Condition Reports

CR-VTY-2014-03290

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

OPOP-SW-2181, "Service Water/Alternate Cooling Operating Procedure," Revision 11
OP 4301, "Intermediate Range Monitor Functional/Calibration," Revision 28

Condition Reports

CR-VTY-2012-05272	CR-VTY-2014-02652	CR-VTY-2014-03012
CR-VTY-2014-01290	CR-VTY-2014-02707	CR-VTY-2014-03027
CR-VTY-2014-02284	CR-VTY-2014-02774	CR-VTY-2014-03200

Work Orders

WO 392950, "7-41A, Reading Lower than Expected on Range 1, 2 and 3"

Miscellaneous

VYC-836, "Diesel Generator Loading," Revision 15
VYC-1404, "Emergency Diesel Generator Fuel Oil Usage and Storage Capacity," Revision 2
VYC-1803A, "Thermal Performance of Alternate Cooling System for Design Basis Conditions,"
Revision 2
VYC-2066, "Post-LOCA Reactor Building Heat-Up Analysis Using the GOTHIC Computer
Program," Revision 0
Vermont Yankee Environmental Qualification of Electrical Equipment, Volume 1, Revision 52
Job Order File 2004-072, "MM 2004-027-RHRSW Train "A" Motor Bearing Oil Cooling Water
Supply Line Improvements"
VYOPF 4115.03, "Torus-to-Drywell Vacuum Breakers Breakaway and Opening Test Data
Sheet," completed 8/13/14 and 6/17/14 and 9/17/14
BVG 12-017, "Commitment Closure Verification Form A-16-960 and A-16-968"
BVG 11-010, "Neutron Absorber Monitoring Program"

NAVY 11-032, Section 3.3, "Supplemental SER for VY License Renewal,"
NAVY 13-046, "Renewed Operating License," Enclosure 2 (SER), Commitment N.52

Section 1R18: Plant Modifications

Procedures

EMMP-INSP-5240-13, "Reactor Building Crane Hoist Limit Switch Adjustments for Outage Settings," Revision 2
ECT-47998-01, "Functional Test for EC 47998 Reactor Building Crane Control Upgrade," Revision 0

Condition Reports

CR-VTY-2008-02043
CR-VTY-2014-03028

Miscellaneous

PP 7023, "Control of Heavy Loads Program Document," Revision 4
EC 47998, "Reactor Building Crane Control Upgrade"
Entergy Reactor Overhead Crane Factory Acceptance Test, Simmers #PS49863
ECN 51333
ECN 52469
Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment No. 29 to the Facility Operating License No. DPR-28, dated January 28, 1977
Additional Information Response, Vermont Yankee Nuclear Power Station Reactor Building Crane Modification, dated July 2, 1976

Section 1R19: Post-Maintenance Testing

Procedures

OP 4115, "Primary Containment Surveillance," Revision 75
OPST-HPCI-4120-02, "HPCI Pump Operability Test (Quarterly)," Revision 5
OPSP-SBO-10067-01, "Monthly Station Blackout Diesel Generator Load Bank Test," Revision 5
OPOP-SBO-10066, "Station Blackout Diesel Generator," Revision 3
OPSP-SBO-10067-02, "Quarterly Station Blackout Diesel Generator Load Bank Test," Revision 4

Condition Reports

CR-VTY-2007-03264	CR-VTY-2014-03012	CR-VTY-2014-03351
CR-VTY-2009-01280	CR-VTY-2014-03027	CR-VTY-2014-03353
CR-VTY-2014-02272	CR-VTY-2014-03030	CR-VTY-2014-03364
CR-VTY-2014-02285	CR-VTY-2014-03118	CR-VTY-2014-03367
CR-VTY-2014-02555	CR-VTY-2014-03349	CR-VTY-2014-03380

Work Orders

WO 00382136, "Replace Lube Oil Filters IAW Service Letter TEBE 0861-00"
WO 00336554, "V16-19-5D; Restore Counterweights IAW EC 35370"
WO 00336556, "V16-19-5B; Restore Counterweights IAW EC 35370"
WO 52499554, "Change Running CRD Pump Suction Filters"
WO 52499329, "CRD Pump, Gear Unit and Motor Oil Change"
WO 52509856, "F-72-14B, Filter Element Replacement"
WO 00307281, "S-72-4B, Replace Y Strainer, Internals Degrading"

WO 52509855, "D-1-1B, IA Dryer Annual Mechanical PM"
WO 00352382, "Re-seal Union Threads, D-1-1B"
WO 52528080, "DG-SBO; Replace Engine Oil and Filters"
WO 52550298, "Diesel Generator General Mechanical Inspection; SBO Diesel"
WO 52547763, "Station Blackout DG Load Bank General Inspection PM"

Miscellaneous

ASME Boiler and Pressure Vessel Code Case N-705, October 12, 2006
CST Tell Tale Flow Data from 6/17/14 to 7/24/14
VYOPF 4115.03, "Torus-to-Drywell Vacuum Breakers Breakaway and Opening Test Data Sheet," completed 8/13/14
EC 35370, "Torus Vacuum Breaker Counterweights Restore Original Configuration"
EC 43870, "Move Vacuum Breaker Counterweights Online"

Section 1R22: Surveillance Testing

Procedures

CHOP-CCW-4623-01, "Sampling and Treatment of closed Cooling Water Systems," Revision 4
ICST-4313-01, "Reactor Water Lo Level Scram – Isolation/Lo-Lo Level Isolation Functional/Calibration," Revision 4
OP 2115, "Primary Containment," Revision 84
OPST-EDG-4126-04B, "18 Month B EDG 8 Hour Operability Test," Revision 3
OPST-RCIC-4121, "Reactor Core Isolation Cooling System Surveillance," Revision 6
OPST-EDG-4126-04A, "18 Month A EDG 8 Hour Operability Test," Revision 3
OPST-EDG-4126-03A, "6 Month A EDG Fast Start Operability Test," Revision 6
OPST-EDG-4126-03B, "6 Month B EDG Fast Start Operability Test," Revision 5

Work Orders

WO 52545160, "OPST-EDG-4126-03A (6 M) 'A' Diesel Gen Fast Start Op Test"

Condition Report

CR-VTY-2014-01832	CR-VTY-2014-02985	CR-VTY-2014-03156
CR-VTY-2014-01856	CR-VTY-2014-03151	CR-VTY-2014-03525
CR-VTY-2014-02884	CR-VTY-2014-03153	CR-VTY-2014-03526

Drawings

B-191301, Sheet 1100, "Primary Containment Isolation System Trip Logic Channel A1," Revision 32
B-191301, Sheet 1102, "Primary Containment Isolation System Trip Logic Channel B1," Revision 33
B-191301, Sheet 850, "RPS Analog Trip A1," Revision 9
B-191301, Sheet 851, "RPS Analog Trip B1," Revision 5

Miscellaneous

TR-107396, "EPRI Closed Cooling Water Guidelines," Revision 1
Chemistry Sampling Database, 7/29/14
EC 10992, "RPS Test Jacks for Scram Frequency Reduction"

Section 1EP2: Alert and Notification System Evaluation

Procedures

AP 3553, "Administration and Maintenance of the Alert and Notification System," Revision 1

Miscellaneous

Alert and Notification System Design Report for Vermont Yankee Nuclear Power Station, approved June 8, 2006

Vermont Yankee Nuclear Power Station Emergency Plan, Revision 54

Monthly Public Notification System Status Reports, January 2013 – June 2014

Section 1EP3: Emergency Response Organization Staffing and Augmentation System

Drill Reports

Team 'A' Communication Drill – 2/27/13

Team 'B', Communication Drill – 6/24/13

Team 'C', Communication Drill – 8/20/13

Team 'D', Communication Drill – 11/2/13

Team 'A', Communication Drill – 3/8/14

Team 'C', Communication Drill – 5/14/14

Unannounced Off-hours Mobilization Drill – 12/11/12

Miscellaneous

VYNPS On-Shift Staffing Analysis Report, Revision 1, dated 12/19/13

Vermont Yankee Nuclear Power Station Emergency Plan, Revision 54

2014 Emergency Plan Duty Roster, Revision 26

Procedures

AP 0894, "Staffing Limits," Revision 17

AP 3554, "Emergency Plan Teams," Revision 5

EN-EP-306, "Drills and Exercises," Revision 5

EN-EP-310, "Emergency Response Organization Notification System," Revision 3

EN-EP-801, "Emergency Response Organization," Revision 8

EN-TQ-110, "Emergency Response Organization Training," Revision 11

EPAP-TRNG-3712, "Emergency Plan Training," Revision 0

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Emergency Action Level Technical Basis, Revision 15

Section 1EP5: Maintenance of Emergency Preparedness

Audits & Self Assessments

QA-7-2013-VY-1, Emergency Plan Audit, dated 6/3/13

QA-7-2104-VY-1, Emergency Plan Audit, dated 5/15/14

LO-VTYLO-2012-00212, 2013 Emergency Planning Program Focused Self-Assessment

LO-VTYLO-2013-056, Vermont Yankee Pre-NRC Inspection Assessment

Condition Reports

CR-VTY-2013-03807

CR-VTY-2013-03914

CR-VTY-2013-05723

CR-VTY-2013-06238
CR-VTY-2014-00893

CR-VTY-2014-01117
CR-VTY-2014-01591

CR-VTY-2014-01727
CR-VTY-2014-02723

Procedures

AP-10049, "Equipment Important to Emergency Response," Revision 2
EN-EP-202, "Equipment Important to Emergency Preparedness," Revision 1
EN-EP-305, "Emergency Planning 10CFR50.54(q) Review Program," Revision 3
EPOP-EQUIP-3506, "Emergency Equipment Readiness Check," Revision 1

Miscellaneous

Vermont Yankee Nuclear Power Station Emergency Plan, Appendix E, Letters of Agreement, Revision 54
Condition Report Detail Report re open EP-related CRs, dated 7/23/14
Condition Report Summary Report re EP-related CRs closed since January 2013, dated 7/23/14
KLD TR-541, Vermont Yankee Nuclear Power Plant Development of Evacuation Time Estimates, Revision 1
KLD TR-560, Vermont Yankee Nuclear Power Plant 2013 Population Update Analysis, Revision 0
EOF Emergency Plan Inventory, SAP-2, Attachment 5, performed 11/12/12
Technical Support Center Inventory, SAP-2, Attachment 11, performed 3/5/13
TSC/OSC Walkdown Inspection, SAP-2, Attachment 20, performed 10/26/12

Section 40A1:Performance Indicator Verification

Procedures

EN-LI-114, "Performance Indicator Process," Revision 6
EN-FAP-EP-005, "Emergency Preparedness Performance Indicators," Revision 3

Condition Reports

CR-VTY-2013-05376
CR-VTY-2014-01399

Miscellaneous

ANS Reliability PI Data, April 2013 – June 2014
DEP PI Data, April 2013 – June 2014
ERO Drill Participation PI Data, April 2013 – June 2014
Performance Indicator Data 3Q13 – 2Q14
VY-RPT-06-00001, "VY Mitigating System Performance Index (MSPI) Bases Document," Revision 1
System Health Report, Emergency Diesel Generators, 2Q14
System Health Report, Residual Heat Removal, 2Q14
System Health Report, Residual Heat Removal Service Water, 2Q14
System Health Report, Service Water, 2Q14

Section 40A2:Problem Identification and Resolution

Procedures

OP 4116, "Secondary Containment Surveillance," Revision 58
EN-DC-140, "Air Operated Valve Program," Revision 1
EN-DC-143-01, "System and Component Health Report Supplemental Guidance," Revision 9

EN-DC-143-01-DP, "System Health Report Supplemental Guidance," Revision 0
 EN-DC-143-DP, "Decommissioning Plant Engineering Health Reports," Revision 0
 EN-DC-159, "System Monitoring Program," Revision 7
 EN-DC-178, "System Walkdowns," Revision 7
 EN-DC-310, "Predictive Maintenance Program," Revision 6
 EN-DC-324, Preventive Maintenance Program," Revision 8
 EN-DC-324, "Preventive Maintenance Program," Revision 12
 EN-DC-324-DP, "Decommissioning Plant Preventive Maintenance Program," Revision 0
 EN-DC-325, "Component Performance Monitoring," Revision 9
 EN-LI-102, "Corrective Action Process," Revision 23
 EN-LI-102-02, "CR Closure Quality," Revision 8
 EN-LI-118, "Cause Evaluation Process," Revision 19
 EN-LI-118, "Cause Evaluation Process," Revision 20
 EN-LI-121, "Trending and Performance Review Process," Revision 15
 EN-MS-S-011-MULTI, "Conduct of Systems & Components Engineering," Revision 11
 EN-MS-S-013-MULTI, "System Engineering Work planning and Prioritization," Revision 6
 EN-MS-S-043-V, "Engineering Input for Immediate Operability Determinations and Risk Assessments," Revision 5
 EN-PL-161, "Zero Tolerance for Unanticipated Equipment Failures," Revision 0
 OP 4113, "Main and Auxiliary Steam System Surveillance," Revision 37
 OP 4152, "Equipment and Floor Drain Sump and Totalizer Surveillance," Revision 52

Condition Reports

CR-VTY-2009-01847	CR-VTY-2013-04192	CR-VTY-2014-00670
CR-VTY-2009-01949	CR-VTY-2013-05756	CR-VTY-2014-01010
CR-VTY-2010-01623	CR-VTY-2013-05758	CR-VTY-2014-01047
CR-VTY-2010-03265	CR-VTY-2013-05763	CR-VTY-2014-01056
CR-VTY-2010-03446	CR-VTY-2013-05843	CR-VTY-2014-01142
CR-VTY-2011-04886	CR-VTY-2013-06109	CR-VTY-2014-01143
CR-VTY-2012-00945	CR-VTY-2013-06257	CR-VTY-2014-01287
CR-VTY-2012-01699	CR-VTY-2014-00049	CR-VTY-2014-01877
CR-VTY-2012-04125	CR-VTY-2014-00112	CR-VTY-2014-01894
CR-VTY-2013-01211	CR-VTY-2014-00221	CR-VTY-2014-01897
CR-VTY-2013-02747	CR-VTY-2014-00313	CR-VTY-2014-01953
CR-VTY-2013-02748	CR-VTY-2014-00321	CR-VTY-2014-02412
CR-VTY-2013-02794	CR-VTY-2014-00331	CR-VTY-2014-02550
CR-VTY-2013-02889	CR-VTY-2014-00348	CR-VTY-2014-02633
CR-VTY-2013-02896	CR-VTY-2014-00349	CR-VTY-2014-02701
CR-VTY-2013-02898	CR-VTY-2014-00350	CR-VTY-2014-02738
CR-VTY-2013-02899	CR-VTY-2014-00406	CR-VTY-2014-02990
CR-VTY-2013-03069	CR-VTY-2014-00421	CR-VTY-2014-02992
CR-VTY-2013-03096	CR-VTY-2014-00519	CR-VTY-2014-02994
CR-VTY-2013-03150	CR-VTY-2014-00562	
CR-VTY-2013-04095	CR-VTY-2014-00610	

Work Orders

WO 00197485, "Replace CRP9-26 "FR" Relay (1-125A-KFR/B)"
 WO 51715765, "10 Year Actuator Refurbishment/Seal Kit Replacement"
 WO 52407460, "10 Year Actuator Refurbishment/Seal Kit Replacement"
 WO 00241109, "Refurbish Actuator (V20-83)"
 WO 00363410, "V20-83; Repair Valve due to Slow Stroke Time"

WO 00364002, "V20-83; Rebuild Actuator using Molykote 44 Lubricant"

Drawings

B-191301, Sheet 1425, "Standby Gas Treatment Exhaust Fan REF-2A System A," Revision 15
B-191301, Sheet 1429, "Standby Gas Treatment System "A" EP Valves," Revision 22
B-191301, Sheet 1426, "Standby Gas Treatment Exhaust Fan REF-28 System B," Revision 17
B-191301, Sheet 1427, "Standby Gas Treatment Electric Heater EUH-2 System A," Revision 13
B-191301, Sheet 1428, "Standby Gas Treatment Electric Heater EUH-4 System B," Revision 13
B-191301, Sheet 1430, "Standby Gas Treatment System "B" EP Valves," Revision 21
P/N 041007, Assembly Drawing CB415/520/725-SR, Revision J
P/N 073743, Assembly Drawing CB415/520/725 SR-M Actuator, Revision J

Miscellaneous

AR#00154941, "PMCR Deferral Request for RCIC LCO maintenance"
AR#161011, "PMCR Deferral Request for MCC-8C-2M"
SGT, "Design Basis Document for Standby Gas Treatment System/Secondary Containment,"
Revision 11
LO-VTYLO-2013-0068
"Human Performance Culpability Evaluations," University of Tennessee-Knoxville, November
2008
CARB Request to Cancel CR-VTY-2012-4125 CA-23 Presentation Record, dated 5/29/14
CARB Request to Cancel CR-VTY-2012-5862 CA-28 Presentation Record, dated 7/10/14
CARB Request to Cancel CR-VTY-2014-0758 CA-23 Presentation Record, dated 7/31/14
CR Benchmarks, dated 8/4/14
Design & Programs Engineering Open CRs Performance Indicator, February 2014 - July 2014
Design Engineering Key Deliverables Performance Indicator, July 2013 - June 2014
Engineering Department Coaching Report, 7/1/14 - 8/7/14
Engineering - System, EPC and Design Department Performance Review Meeting (DPRM)
Agenda, June 2014
Engineering Changes Performance Indicator, July 2013 - July 2014
Equipment Reliability Index Performance Indicator, July 2013 - July 2014
Failures of Critical Components Performance Indicator, July 2013 - July 2014
LPN VLP-ESPCT-OPRISK, "Engineering Standard EN-MS-S-043-V Training Attendance List,"
dated 10/3/13
Quality Assurance Audit Report QA-8-2013-VTY-1, 5/21/13
System Engineering Aggregate Indicator Performance Indicator, February 2014 - July 2014
System Standard Meeting Agenda, dated 8/13/14
SEP-VTY-IST-001, "Vermont Yankee Inservice Testing Program Plan," Revision 1
Temporary Modifications (Non-Outage) Open > 60 Days Performance Indicator, July 2013 –
July 2014
Top Ten Equipment Reliability List, dated 7/22/14
Vermont Yankee CAP Performance Index - July 2014, dated 8/1/14
Vermont Yankee Daily Plant Status Report, dated 8/11/14
VY Maintenance Rule Expert Panel Meeting Minutes, dated 9/25/13, 11/18/13, 2/14/14, 4/28/14,
and 6/23/14
VYEM 0091, "GH Bettis Pneumatic Actuators Instruction Manual"

Audits and Assessments

VTYLO-2013-00066, "Effectiveness Review for VTY-2013-04095 Snapshot Self-Assessment,"
dated 2/23/14
VTYLO-2013-00225, "Engineering Risk Assessment Snapshot Benchmark," dated 10/24/13

- VTYLO-2014-00007, "System Engineering Compliance to EN-IT-104, Software Quality Assurance Program Snapshot Assessment," dated 1/17/14
 VTYLO-2014-00008, "Design Engineering Compliance to EN-IT-104, Software Quality Assurance Program Snapshot Assessment," dated 1/17/14
 VTYLO-2014-00011, "Process Applicability Determination Review (Semi-Annual) Assessment," dated 6/11/14

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- AR 00197363, RFO-31 PM Frequency Code Conversions, dated 4/22/14
 CR-VTY-2010-01623 CA-38, CA Due Date Extension, dated 5/19/14
 CR-VTY-2011-00900 CA-6, CA Due Date Extension, dated 6/20/14
 CR-VTY-2012-05862, Evidence of Stem to Wedge Separation on 12 Inch Fire Protection System Manual Valve V76-4B Apparent Cause Evaluation Report, dated 8/4/14
 CR-VTY-2013-04095, Engineering Risk Assessments Apparent Cause Evaluation Report, dated 7/23/13
 CR-VTY-2014-00928, DG-1-1A Engineering Immediate Operability Recommendation, dated 3/6/14
 CR-VTY-2014-01056, P-7-1A Engineering Immediate Operability Recommendation, dated 3/17/14
 CR-VTY-2014-01116, P-46-1A Engineering Immediate Operability Recommendation, dated 3/20/14
 CR-VTY-2014-01630, SW System Engineering Immediate Operability Recommendation, dated 4/25/14
 CR-VTY-2014-01675, DG-1-1B Engineering Immediate Operability Recommendation, dated 4/30/14
 CR-VTY-2014-01726, DG-3-1A Engineering Immediate Operability Recommendation, dated 5/2/14
 CR-VTY-2014-01969, ECCS Engineering Immediate Operability Recommendation, dated 5/23/14
 CR-VTY-2014-02055, Operability Evaluation 50.59 Process Applicability Determination, dated 6/11/14
 CR-VTY-2014-02285, TK-4-1A Engineering Immediate Operability Recommendation, dated 6/18/14
 CR-VTY-2014-02950, 4.16 KV Switchgear Engineering Immediate Operability Recommendation, dated 8/7/14
 EN-LI-102 Attachment 9.3, Checklist for Level C CR Closure (CR-VTY-2014-01287), dated 4/24/14
 EN-LI-102 Attachment 9.8, CR-VTY-2010-03257 CR Interim and Periodic Review, dated 3/25/14
 EN-LI-102 Attachment 9.8, CR-VTY-2011-00900 CR Interim and Periodic Review, dated 11/19/13
 EN-LI-102 Attachment 9.8, CR-VTY-2012-4125 CR Interim and Periodic Review, dated 4/23/14
 EN-LI-102 Attachment 9.8, CR-VTY-2013-04704 CR Interim and Periodic Review, dated 2/3/14
 EN-LI-102 Attachment 9.9, CR-VTY-2010-05389 LTCA Classification, dated 10/23/13
 EN-LI-102 Attachment 9.9, CR-VTY-2011-00900 LTCA Classification, dated 11/19/13
 EN-LI-118 Attachment 9.12, CR-VTY-2014-1953 Level 2 Human Performance Evaluation, dated 6/3/14
 EN-MS-S-043-V Attachment 9.6, CR-VTY-2010-03257 CA-26 Risk Identification and Reduction Periodic Review, dated 3/25/14
 EN-MS-S-043-V Attachment 9.6, CR-VTY-2010-05389 CA-04 Risk Identification and Reduction Periodic Review, dated 10/23/13

EN-MS-S-043-V Attachment 9.6, CR-VTY-2011-00900 CA-14 Risk Identification and Reduction Periodic Review, dated 11/19/13
EN-MS-S-043-V Attachment 9.6, CR-VTY-2012-04125 CA-26 Risk Identification and Reduction Periodic Review, dated 4/23/14
EN-MS-S-043-V Attachment 9.6, CR-VTY-2013-04704 CA-11 Risk Identification and Reduction Periodic Review, dated 2/3/14
EN-WM-10 Attachment 9.1, WO 347683 On-Line Emergent Work Add/Del Approval, dated 1/16/14
P-7-1A and P-7-1D Service Water Pump Inspection versus Replacement Evaluation, dated 1/17/14
PMRQ# 50043992-04, Turbine Overhaul and Inspection (TU-1-1A) PMCR Request, dated 2/27/14
SIPD# 976, VY-PHC Activity Cancellation, dated 2/12/14
WT-WTVTY-2013-0005 CA-171, A EDG HX Performance Test PHC Recommendation, dated 9/16/13

System Health Reports, Walkdown Reports, & Trending

125 Volts DC Electrical Walkdown Report, dated 5/14/14
Emergency Diesel Generators System Health Report, Q2-2014
Emergency Diesel Generators Walkdown Report, dated 7/17/14
EQ09 - Fire Protection Equipment Issue Trend Data, dated 8/1/13 - 7/1/14
High Pressure Coolant Injection System Health Report, Q2-2014
High Pressure Coolant Injection Walkdown Report, dated 7/3/14
Residual Heat Removal System Health Report, Q2-2014
TK-4-1A Leak Details Trend Data, dated 1/7/13 - 7/6/14
WTVTY-2014-51 CA51, CR Trending Analysis, dated 7/23/14

LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
A	ampere
ACE	apparent cause evaluation
ANS	Alert and Notification System
AOV	air-operated Valve
ASME	American Society of Mechanical Engineers
CA&A	corrective action and assessment
CARB	corrective action review board
CR	condition report
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EC	engineering change
EAL	emergency action level
ECN	engineering change notices
EDG	emergency diesel generator
EP	Emergency Preparedness
E-P	Ethylene-Propylene
ERO	Emergency Response Organization
HUEs	Human Performance Evaluations
IMC	inspection manual chapter
JPM	job performance measure
LT-ACEs	lower-tier apparent cause evaluations
MIC	microbiologically induced corrosion
NC	normally closed
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
RHR	residual heat removal
SBO	station blackout
SDP	significance determination process
SSC	structure, system, and/or component
UFSAR	Updated Final Safety Analysis Report
VY	Vermont Yankee Nuclear Power Station
VYEM	Vermont Yankee Equipment Manual