UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

October 20, 2011

Mr. Michael Colomb
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 05000271/2011004

Dear Mr. Colomb:

On September 30, 2011, 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 6, 2011, with Mr. Christopher Wamser, General Manager of Plant Operations, and other members of your staff.

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

Based on the results of this inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

Ronald R. Bellamy

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

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

Enclosure: Inspection Report No. 05000271/2011004
w/ Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

October 20, 2011

Mr. Michael Colomb
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 05000271/2011004

Dear Mr. Colomb:

On September 30, 2011, 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 6, 2011, with Mr. Christopher Wamser, General Manager of Plant Operations, and other members of your staff.

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

Based on the results of this inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,
/RA/
Dr. Ronald R. Bellamy, Chief
Projects Branch 5
Division of Reactor Projects

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

Distribution w/encl: (via E-mail)

W. Dean, RA	M. Franke, OEDO	K. Dunham, DRP
D. Lew, DRA	R. Bellamy, DRP	S. Rich, DRP, RI
D. Roberts, DRP	S. Rutenkroger, DRP	A. Rancourt, DRP, OA
J. Clifford, DRP	T. Setzer, DRP	RidsNrrPMVermontYankeeResource
C. Miller, DRS	B. Keighley, DRP	RidsNrrDorlLl1-1 Resource
P. Wilson, DRS	J. DeBoer, DRP	ROPreportsResource@nrc.gov

SUNSI Review Complete: TCS (Reviewer's Initials) **ML112930450**
DOCUMENT NAME: G:\DRP\BRANCH5\Reports\Final\VY 2011004.docx
After declaring this document "An Official Agency Record" it will be released to the Public.
To receive a copy of this document, indicate in the box: 'C' = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI/DRP	lhp	RI/DRP		RI/DRP	
NAME	SRutenkroger/tcs for		TSetzer/tcs		RBellamy/rrb	
DATE	10/20 /11		10/20/11		10/20/11	
OFFICIAL RECORD COPY						

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-271
License No.:	DPR-28
Report No.:	05000271/2011004
Licensee:	Entergy Nuclear Operations, Inc.
Facility:	Vermont Yankee Nuclear Power Station
Location:	Vernon, Vermont 05354-9766
Dates:	July 1, 2011 through September 30, 2011
Inspectors:	D. Spindler, Senior Resident Inspector S. Rutenkroger, PhD, Senior Resident Inspector S. Rich, Resident Inspector J. Nicholson, Health Physicist
Approved by:	Dr. Ronald R. Bellamy, Chief Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS 3

REPORT DETAILS 4

1. REACTOR SAFETY 4

1R01 Adverse Weather Protection 4

1R04 Equipment Alignment 5

1R05 Fire Protection 6

1R07 Heat Sink Performance 8

1R11 Licensed Operator Requalification Program 8

1R13 Maintenance Risk Assessments and Emergent Work Control 9

1R15 Operability Evaluations 10

1R19 Post-Maintenance Testing 11

1R22 Surveillance Testing 12

1EP6 Drill Evaluation 12

4. OTHER ACTIVITIES [OA] 13

4OA1 Performance Indicator (PI) Verification 13

4OA2 Problem Identification and Resolution 14

4OA3 Follow-Up of Events and Notices of Enforcement Discretion 15

4OA5 Other Activities 16

4OA6 Meetings, including Exit 17

KEY POINTS OF CONTACT A-1

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED A-2

LIST OF DOCUMENTS REVIEWED A-2

LIST OF ACRONYMS A-10

SUMMARY OF FINDINGS

IR 05000271/2011004; 07/01/2011 – 09/30/2011; Vermont Yankee Nuclear Power Station; Integrated Inspection Report.

This report covered a three-month period of inspection by resident inspectors and a regional inspector. Based on the results of this inspection, no findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

REPORT DETAILS

Summary of Plant Status

Vermont Yankee Nuclear Power Station (VY) began the inspection period at 100 percent power. On August 5, 2011, operators reduced power to 75 percent to perform a rod pattern adjustment and returned power to 100 percent the same day. On August 23, operators reduced power to 48 percent to make repairs to the "B" feedwater regulating valve actuator. Following repairs, operators returned VY to 100 percent power the following day. On August 31, VY entered end-of-cycle coastdown operations. On September 3, operators commenced a technical specification required shutdown due to the failure of room cooler RRU-7. Operators reduced power to 95 percent and then completed compensatory actions and exited the technical specification required shutdown action statement. Operators returned VY to the maximum coastdown power, 98 percent, the same day. On September 25, the "B" recirculation pump motor generator set tripped, and the operators stabilized power at 34 percent. Operators maintained VY below 46 percent power for the remainder of the inspection period while motor generator set repairs were ongoing.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 Impending Adverse Weather

a. Inspection Scope

The inspectors performed a review of Entergy's procedures to evaluate their process for preparing for imminent thunder storms accompanied by lightning and high winds. This review was conducted on July 6 due to forecasted adverse weather in the area. The inspectors reviewed adverse weather information contained in the External Events Design Basis Document and Updated Final Safety Analysis Report (UFSAR) and compared it to the actions specified in OPOP-PHEN-3127, "Natural Phenomena," Revision 2. The inspectors also performed a walkdown of the reactor building and areas external to safety related equipment to verify that equipment readiness was adjusted to meet the onset of storms accompanied by lightning and high winds. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Impending Adverse Weather

a. Inspection Scope

On August 25 and 26, the inspectors reviewed Entergy's preparations for potential tropical storm wind conditions and heavy rain associated with Tropical Storm Irene. The inspectors reviewed adverse weather information contained in the External Events Design Basis Document and UFSAR, and compared it to the actions specified in OPOP-PHEN-3127, "Natural Phenomena," Revision 2. The inspectors also performed a walkdown of the protected area and the area around the switchyard to verify items were tied down or stored so they would not be affected by the high winds.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdowns (71111.04Q – 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- "A" residual heat removal (RHR) system during "B" RHR pump and valve testing
- Reactor core isolation cooling system during high pressure coolant injection system testing
- Uninterruptible power supply (UPS) 1B, with UPS-1A unavailable
- Service water system following inspection port installation

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, work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Entergy staff had properly identified equipment issues and entered them into the corrective action program for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors performed a complete system walkdown of accessible portions of the control rod drive system to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, drawings, equipment line-up check-off lists, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors also reviewed electrical power availability, hanger and support functionality, and functionality of support systems. The inspectors performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related condition reports and work orders to ensure Entergy appropriately evaluated and resolved any deficiencies. The inspectors discussed system condition with the system engineer.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Resident Inspector Quarterly Walkdowns (71111.05Q – 5 samples)

a. Inspection Scope

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

- Reactor Building Northeast Corner Room, FZ-1
- Reactor Building Southeast Corner Room, FZ-2
- Torus Room, RB-1, RB-2
- "A" Emergency Diesel Generator Room, FA-8
- Fuel Oil Storage Tank and Transfer Pump House, FA-12

b. Findings

No findings were identified.

.2 Annual Inspection (71111.05A – 1 sample)

a. Inspection Scope

The inspectors observed a fire brigade drill scenario conducted on July 26 that involved the "A" station battery room. The inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified Entergy personnel identified deficiencies, openly discussed them in a self-critical manner at the debrief, and took appropriate corrective actions as required. The inspectors verified that the fire brigade:

- Properly used turnout gear and self-contained breathing apparatus
- Properly used and laid out fire hoses
- Employed appropriate fire-fighting techniques
- Brought sufficient fire-fighting equipment to the scene
- Effectively used command and control
- Searched for victims and for propagation of the fire into other plant areas
- Conducted smoke removal operations
- Properly used pre-planned strategies
- Adhered to the pre-planned drill scenario
- Met drill objectives

The inspectors also evaluated the fire brigade's actions to determine whether these actions were in accordance with Entergy's fire-fighting strategies.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

Annual Review of Cables Located in Underground Bunkers/Manholes

a. Inspection Scope

The inspectors conducted an inspection of underground manholes subject to flooding that contain cables whose failure could disable risk-significant equipment. The inspectors performed walkdowns of risk-significant areas, including manholes MH-32, MH-33, MH-P9 and MH-P13, to verify that the cables were not submerged in water, that cables and/or splices appeared intact, and to observe the condition of cable support structures. The inspectors also reviewed the results of Entergy's manhole pump out

efforts to verify pump out frequency was sufficient to maintain water levels below the cables, and if not, that appropriate corrective actions were taken.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07 – 1 sample)

Annual Inspection

a. Inspection Scope

The inspectors reviewed the results of the thermal performance tests of the "A" residual heat removal system heat exchanger. The inspectors discussed the test results with the system engineer, reviewed the completed surveillance data to determine whether test results met acceptance criteria, and verified the criteria considered differences between test conditions and design basis accident conditions. The inspectors also reviewed Entergy's corrective action program to ensure significant heat exchanger performance problems were appropriately identified and documented and that corrective actions assigned were appropriate.

b. Findings

No findings were identified

1R11 Licensed Operator Requalification Program (71111.11)

Quarterly Inspection (71111.11Q – 1 sample)

a. Inspection Scope

The inspectors observed licensed operator simulator training on August 22, 2011, which included Just-in-Time (JIT) training for a scheduled power reduction to repair a feedwater regulating valve actuator. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, the implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12 – 2 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structures, systems and components (SSC) performance and reliability. The inspectors reviewed system health reports, corrective action program documents, 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 10 CRF 50.65 (a)(2) performance criteria established by Entergy staff was reasonable. Additionally, the inspectors ensured that Entergy staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Residual Heat Removal System
- Emergency Diesel Generators

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 7 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 probabilistic risk analyst 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 to verify risk analysis assumptions were valid and applicable requirements were met.

- Workweek 1128 - "A" Control Rod Drive Pump Emergent Activity Combined with "A" Turbine Building Closed Loop Cooling Pump Maintenance
- Workweek 1129 – Yellow Risk Due to HPCI Unavailability
- Workweek 1130 – Heavy Lift in Reactor Building for #9 Dry Fuel Storage Cask Campaign

- Workweek 1132 – "A" Service Water Strainer Maintenance and "B" Feed Reg. Valve in Local Control
- Workweek 1136 – "A" Service Water Strainer and "B" 480V Uninterruptible Power Supply Out of Service
- Workweek 1137 – Standby Liquid Control Surveillance Testing, Heavy Lifts in the Reactor Building, and UPS-1A Unavailable Due to a Failure of the Coupling to the Tachometer
- Workweek 1138 – "B" Emergency Diesel Generator Fast Start Surveillance, Condensate Storage Tank Cleaning and Single Loop Operation due to Failure of the "B" Recirculation Motor Generator Set

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15 – 6 samples)

a. Inspection Scope

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

- High area temperatures in the Reactor Building
- Reactor building differential pressure step change
- Reactor building differential pressure greater than -2.0 inches H2O due to reactor building supply fan (RSF-1A) rotating backwards
- Non-conservative MAPLHGR calculation discovered for GEH/GNF fuel in the current core load
- V-16-19-5E, drywell to torus vacuum breaker, exceeded the maximum opening force acceptance criteria during testing
- RRU-7 out of service and unable to provide cooling to "A" core spray pump

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

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)

Permanent Modifications

a. Inspection Scope

The inspectors evaluated a modification to instrument air dryer D-1-1A implemented by engineering change package EC26705, "Instrument Air Dryer D-1-1A Replacement." The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification to ensure that this modification did not adversely affect the availability, reliability, or functional capability of any risk-significant SSCs. The inspectors reviewed the engineering change package, and observed the system in operation following the implementation of the modifications.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 7 samples)

a. Inspection Scope

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

- D-1-1B, "B" instrument air dryer replacement
- "B" feedwater regulating valve positioner and potentiometer replacement
- Repair of reactor building closed loop cooling water system heat exchanger E-8-1B
- RRU-7 discharge valve replacement
- "A" service water strainer preventive maintenance
- UPS-1-A, uninterruptible power supply control circuit relay coil replacement
- Backup meteorological tower delta temperature detector repairs

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or 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:

- Scram discharge instrument volume high water functional test
- Drywell high pressure scram/isolation functional test
- Reactor coolant system leak detection surveillance (RCSLD)
- "A" standby fuel pool cooling system pump operability and discharge check valve comprehensive test (IST)
- Reactor water level recirculation pump trip and alternate rod insertion functional test
- High pressure coolant injection system actuation logic functional testing

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness (EP)

1EP6 Drill Evaluation (71114.06 – 1 sample)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine emergency drill on August 31, 2011, to identify any weaknesses and deficiencies in the classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator, technical support center (TSC), and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the TSC drill critique to compare inspector observations

with those identified by Entergy staff in order to evaluate Entergy's critique and to verify whether Entergy staff was properly identifying weaknesses and entering them into the corrective action program.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Safety System Functional Failures (1 sample)

a. Inspection Scope

The inspectors sampled Entergy's submittals for Vermont Yankee for the Safety System Functional Failures performance indicator for the period of July 1, 2010, through June 30 2011. To determine the accuracy of the performance indicator data reported during those periods, inspectors used definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73." The inspectors reviewed Entergy's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, condition reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index (2 samples)

a. Inspection Scope

The inspectors reviewed Entergy's submittal of the Mitigating Systems Performance Index for the following systems for the period of July 1, 2010, through June 30, 2011:

- High Pressure Injection System
- Heat Removal System

To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed operator narrative logs, condition reports, mitigating systems performance

index derivation reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 3 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

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

b. Findings and Observations

No findings were identified.

.2 Annual Sample: Review of Adequacy of Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed condition reports, procedures, and work orders involving post maintenance activities to verify that these adequately ensured the operability of safety related components following maintenance. The inspectors evaluated post maintenance testing against the requirements of Entergy/Vermont Yankee's procedure EN-WM-107, "Post Maintenance Testing." The inspection effort represented one sample. The documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings were identified. The inspection noted the following observation:

The inspectors observed that the planning for post maintenance testing does not effectively use the guidelines provided in Entergy fleet procedure EN-WM-107, "Post Maintenance Testing." This procedure provides guidance on identifying and preparing post maintenance testing. Adhering to this procedure would increase the likelihood that the post maintenance tests will cover all aspects of equipment operation that could have

been affected by maintenance. This observation was discussed with Entergy staff, and Entergy personnel initiated CR-VTY-2011-03362.

.3 Annual Sample: On Line Risk Management

a. Inspection Scope

The inspectors performed an in-depth review of Entergy's corrective actions associated with condition reports CR-VTY-2010-0469, CR-VTY-2010-5020, CR-VTY-2011-0028 and CR-VTY-2011-1184, all related to on line risk assessment and critical plant equipment protection issues. The inspectors performed a search of the condition report database for additional condition reports related to on line risk assessment. The inspectors reviewed control room logs, work week risk assessments and site procedures to verify that Entergy was meeting the requirements of 10 CFR 50.65(a)(4) and their fleet procedures. The inspectors assessed Entergy's problem identification threshold, extent of condition reviews, compensatory actions, and the prioritization and timeliness of corrective actions to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with on line risk assessment 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 interviewed operations personnel to assess the effectiveness of the implemented corrective actions.

b. Findings and Observations

No findings were identified.

The inspectors determined that Entergy was meeting the requirements of 10 CFR 50.65(a)(4) by assessing and appropriately managing the risk resulting from maintenance activities. However, the inspectors observed that operations staff and work planning staff had written several condition reports in the past six months to document corrections to the approved weekly risk assessment for surveillance activities. These corrections included both increases in the assessed risk level and decreases in the assessed risk level. Entergy took appropriate corrective actions to address each individual occurrence. After discussion with the inspectors, Entergy entered CR-VTY-2011-3433 in their corrective action program to collectively address surveillance activity risk assessment.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 1 sample)

Plant Events

a. Inspection Scope

The inspectors staffed the site as Hurricane Irene (downgraded to a tropical storm) moved through the area. The inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems.

The inspectors verified the availability of systems important to safety by monitoring conditions and alarms in the control room and by performing walkdowns of inside areas to look for water intrusion. The inspectors verified that operator actions defined in Entergy's adverse weather procedure maintained the readiness of essential systems. The inspectors discussed readiness and staff availability for adverse weather response with operations and work control personnel and monitored Entergy's contingency staffing of emergency response facilities. The inspectors communicated the plant events to appropriate regional personnel. The inspectors verified that Entergy made appropriate emergency classification assessments and properly reported the event. The inspectors reviewed Entergy's follow-up actions related to the event to ensure that Entergy implemented appropriate corrective actions commensurate with their safety significance. The inspectors conducted site walkdowns after the storm had abated to ensure no adverse conditions existed.

b. Findings

No findings were identified.

4OA5 Other Activities

Independent Spent Fuel Storage Installation (ISFSI) (60855, 60855.1)

a. Inspection Scope

The inspectors observed activities associated with the loading of a dry cask canister to ensure that technical specifications were met, equipment operated properly, and personnel were properly trained. The inspectors observed the use of the lateral seismic restraints for the stack up during the transfer of the multi-purpose canister (MPC) from the HI-TRAC to the HI-STORM and noted that the lateral restraints were utilized according to the procedure with no issues observed. Prior to the inspection, NRC Spent Fuel Storage and Transportation personnel reviewed the calculation for the seismic restraints.

The inspectors reviewed documents and records associated with the operation of the VY ISFSI. The inspectors discussed the fuel selection process and associated documentation with reactor engineering personnel. The inspectors reviewed the video recording of the fuel assemblies being placed into the canister to ensure that each fuel assembly was placed into the proper location. The inspectors observed work activities on the refuel floor associated with the fuel selection and loading of fuel assemblies into the cask. The inspectors observed the placement of the automated welding system onto the cask and the subsequent welding of the cask lid and dye penetrant examination of the weld. In addition, the inspectors observed the setup and operation of the vacuum drying system.

The inspectors reviewed two condition reports, CR-VTY-2011-02571 and CR-VTY-2011-02543, initiated during this loading campaign. The condition reports involved a human performance deficiency identified during the vacuum drying phase. Specifically, while

lowering the MPC pressure to dry the cask, the first pressure hold plateau at 90-100 TORR was missed, resulting in pressure being reduced to approximately 78 TORR prior to being raised back up to the 90-100 TORR range and performing the 15 minute pressure hold time. In consultation with Holtec, the dry cask vendor, Entergy determined that there was no impact to the spent fuel in the MPC as a result of initially going below the procedural requirement of 90-100 TORR prior to establishing the 15 minute hold time at the required pressure range. The inspectors did not identify any concerns associated with the event.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

On October 6, 2011, the inspectors presented the inspection results to Mr. Christopher Wamser, General Manager of Plant Operations, and other members of the Vermont Yankee Nuclear Power Plant staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

On August 8, 2011, the inspectors presented the ISFSI inspection results to Mr. Michael Colomb, Site Vice President, and other members of the Vermont Yankee Nuclear Power Plant staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
M. Colomb, Site Vice President
C. Wamser, General Manager of Plant Operations
M. Romeo, Director of Nuclear Safety
R. Wanczyk, Licensing Manager
N. Rademacher, Director of Engineering
M. Gosekamp, Operations Manager
J. Rogers, Design Engineering Manager
J. Merkle, System Engineering Manager
D. Jones, Asst. Operations Manager
P. Ryan, Security Manager
B. Pittman, Assistant Operations Manager
M. Tessier, Maintenance Manager
J. Hardy, Chemistry Manager
P. Corbett, Quality Assurance Manager
S. Naeck, Outage Manager
J. Bengtson, CA&A Manager
D. Tkatch, Radiation Protection Manager
M. Castronova, Manager of Projects
J. Ward, I&C Superintendent
R. Heathwaite, Chemistry Supervisor
C. Daniels, FIN Team Superintendent
R. Current, Sr. Electrical I&C System Engineer
L. Doucette, System Engineer
J. Devincentis, Licensing Engineer
M. Morgan, Technical Training Superintendent
M. Anderson, Fire Protection Engineer
M. Pletcher, Shift Technical Advisor
L. Leigh, I&C Supervisor
M. Palionis, PRA Engineer
M. Janus, Electrical Superintendent
N. Roark, System Engineer
J. Stasolla, Maintenance Rule Engineer
K. Swanger, Senior Project Manager
T. Cappelletti, Mechanical Maintenance Superintendent
M. Prusak, Mechanical Maintenance Supervisor
B. Buteau, State Liason Engineer
B. Hall, Senior Assessor
D. Jeffries, System Engineering Supervisor
R. Power, Program & Components Engineer
S. Howe, Electrical Maintenance Supervisor

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
OPOP-PHEN-3127, "Natural Phenomena," Revision 2 and Revision 3

Condition Reports
CR-VTY-2011-02716

Section 1R04: Equipment Alignment

Procedures
OE 3107, "EOP/SAG Appendices," Revision 27
OPOP-RCIC-2121, "Reactor Core Isolation Cooling System," Revision 55
OPOP-ALTSD-3126, "Shutdown using Alternate Shutdown Methods," Revision 1
OPON-3145-01, "Loss of CRD Regulating Function," Revision 2
OP 2111, "Control Rod Drive System," Revision 64
OPOP-SW-2181, "Service Water/Alternate Cooling Operating Procedure," Revision 0

Condition Reports
CR-VTY-2011-00849 CR-VTY-2011-02568 CR-VTY-2011-03916

Drawings
G-191172, "Flow Diagram Residual Heat Removal System," Revision 70
G-191174 Sheet 2, "Flow Diagram Reactor Core Isolation Cooling System," Revision 24
G-191174 Sheet 1, "Flow Diagram Reactor Core Isolation Cooling System," Revision 44
G-191170, "Flow Diagram Control Rod Drive Hydraulic System," Revision 51
G-191159 Sheet 1, "Flow Diagram Service Water System," Revision 82

Miscellaneous Documents
Control Rod Drive System Health Report – Q2-2011, August 30, 2011
EC 23311, "Scram Discharge Volume Flush Tap Connections"
AP 0096.3, "Temporary Change Form – Procedure OPOP-SW-2181," September 7, 2011

Section 1R05: Fire Protection

Procedures
OP 2186, "Fire Suppression Systems," Revision 62
OP 3020, "Fire Emergency Response Procedure," Revision 57
OP 2195, "Fuel Oil Transfer System," Revision 36
EN-TQ-125, "Fire Brigade Drills," Revision 1

EN-DC-161, "Control of Combustibles," Revision 4

Pre-Fire Plans
PFP-RB-9, "Torus North (RB-1) Elevation 232'," Revision 0
PFP-RB-11, "Torus North (RB-1) Elevation 213'," Revision 0
PFP-RB-6, "Reactor Building – South, Elevation 252'," Revision 0
PFP-RB-8, "Torus South – Elevation 232'," Revision 0
PFP-RB-10, "Torus South – Elevation 213'," Revision 0
PFP-TB-5, "Diesel Rooms," Revision 0
PFP-FOST, "Fuel Oil Storage Tank," Revision 0

Miscellaneous Documents
Fire Brigade Drill Scenario, April 2, 2010
Fire Hazards Analysis, App. B, Revision 11
VY SSCA Safe Shutdown Capability Analysis, Volume 1, Revision 9
Transient Combustible Evaluation 2011-18

Section 1R06: Flood Protection Measures

Procedures
EN-DC-346, "Cable Reliability Program," Revision 1

Condition Reports
CR-VTY-2011-03385

Work Orders
WO 52338907
WO 52338908
WO 52338909
WO 52338910

Section 1R07: Heat Sink Performance

Procedures
OP 4124, "Residual Heat Removal and RHR Service Water Surveillance," Revisions 113, 114, 115, 116, 117, and 118

Condition Reports
CR-VTY-2006-02307
CR-VTY-2010-05062
CR-VTY-2010-05116
CR-VTY-2011-00065
CR-VTY-2011-00518

Work Orders
WO 00255449
WO 51794977

Miscellaneous

PD041064, "Record of Eddy Current Inspection of Residual Heat Exchanger (RHR) E-14-1A at Entergy Nuclear Northeast's Vermont Yankee Nuclear Power Station, Vernon, Vermont," April 2009

4124.06A, "RHRSW Pump "A" (P-8-1A) and Valve Operability and Full Flow Test Data Sheet," October 20, 2009

4124.06A, "RHRSW Pump "A" (P-8-1A) and Valve Operability and Full Flow Test Data Sheet," February 4, 2010

4124.06A, "RHRSW Pump "A" (P-8-1A) and Valve Operability and Full Flow Test Data Sheet," April 22, 2010

4124.06A, "RHRSW Pump "A" (P-8-1A) and Valve Operability and Full Flow Test Data Sheet," May 22, 2010

4124.06A, "RHRSW Pump "A" (P-8-1A) and Valve Operability and Full Flow Test Data Sheet," November 3, 2010

4124.06A, "RHRSW Pump "A" (P-8-1A) and Valve Operability and Full Flow Test Data Sheet," January 2, 2011

4124.06A, "RHRSW Pump "A" (P-8-1A) and Valve Operability and Full Flow Test Data Sheet," February 3, 2011

4124.06A, "RHRSW Pump "A" (P-8-1A) and Valve Operability and Full Flow Test Data Sheet," July 2, 2011

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," July 28, 2009

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," September 8, 2009

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," October 20, 2009

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," December 10, 2009

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," February 4, 2010

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," March 9, 2010

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," April 22, 2010

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," May 22, 2010

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," September 8, 2010

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," November 3, 2010

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," December 9, 2010

4124.06C, "RHRSW Pump "C" (P-8-1C) and Valve Operability and Full Flow Test Data Sheet," February 3, 2011

Section 1R11: Licensed Operator Requalification Program

Procedures
EN-RE-215, "Reactivity Maneuver Plan (BWR)," Revision 1

Miscellaneous
LOR-28-902, "Plant Power Reduction and FRV Repair," Revision 0

Section 1R12: Maintenance Effectiveness

Procedures
OP 4126, "Diesel Generator Surveillance," Revision 87
EN-DC-204, "Maintenance Rule Scope and Basis," Revision 2

Condition Reports
CR-VTY-2010-02914 CR-VTY-2010-03351 CR-VTY-2011-03399

Miscellaneous Documents
State of the System Report – Residual Heat Removal, June 30, 2011
Residual Heat Removal SSC Performance History, June 30, 2008 through June 30, 2011
Standing Order 2010-01, "Declaring Maintenance Rule Equipment Unavailable"
Scoping Basis Document – Residual Heat Removal, Revision 5
Maintenance Rule Monthly Report, June 2011
System Performance Monitoring Plan, Revision 4
List of Diesel Generator Preventive Maintenance Tasks
EDG – Emergency Diesel Generators System Health Report, 2nd quarter 2011
Diesel Generator Performance History, August 31, 2008 through August 31, 2011
State of the System Report – Emergency Diesel Generator & Auxiliaries, August 31, 2011

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures
AP 0172, "Work Schedule Risk Management – Online," Revision 22
AP 0172, "Work Schedule Risk Management – Online," Revision 23
EN-OP-119, "Protected Equipment Postings," Revision 2
EN-OP-119, "Protected Equipment Postings," Revision 3
EN-WM-104, "Online Risk Assessment," Revision 4

Condition Reports
CR-VTY-2011-02871 CR-VTY-2011-03899

Work Orders
WO 00124998

Miscellaneous Documents
EOOS Risk Assessment Tool
Work Week 1128 Schedule
Work Week 1129 Schedule
Work Week 1130 Schedule
Work Week 1132 Schedule
Work Week 1136 Schedule
Work Week 1137 Schedule
Work Week 1138 Schedule
VY EOOS Risk Assessment – WW1128, Revision 0
VYAPF 0172.01, "Online Maintenance Safety Assessment Review," July 18, 2011 through July 24, 2011
VYAPF 0172.02, "Risk Management Worksheet," August 8, 2011 through August 10, 2011
VYAPF 0172.02, "Risk Management Worksheet," September 8, 2011 through September 10, 2011
VYAPF 0172.02, "Risk Management Worksheet," September 29, 2011
EN-OP-119, Att. 9.3, "Work Authorization of Protected Equipment," completed August 10, 2011
EC 31523, "Affect on HPCI and RCIC during on-line CST Cleaning" Revision 0

Section 1R15: Operability Determinations and Functionality Assessments

Procedures
ON 3158, "Reactor Building High Area Temperature/Water Level," Revision 10
EOP 4, "Secondary Containment and Radioactivity Control," Revision 2
EN-OP-104, "Operability Determination Process," Revision 5
OPOP-SW-2181, "Service Water/Alternate Cooling Operating Procedure," Revision 00

Condition Reports

CR-VTY-2011-02095	CR-VTY-2011-02797
CR-VTY-2011-02794	CR-VTY-2011-03518

Miscellaneous Documents
VYC-2217, "Corner Room's Temperature, without RRU-7/8 in Operation," Revision 0
4181.06, "Flow Rate Testing of RRU's 5, 6, 7, and 8," September 3, 2011
Document SGT, "Design Basis Document for Standby Gas Treatment/Secondary Containment," Revision 11
Document SGI, "Design Basis Document for Standby Gas Treatment System/Secondary Containment," Revision 11
LRW-ENO-GEN-11-093- "10CFR50.46 Notification Letters 2011-002 and 2011-003 from Global Nuclear Fuels GNF"
COLR Cycle 28, "VY Core Operating Limits Report," Revision 1
Document CPS, "Design Basis Document for Containment Pressure Suppression System," Revision 20

Section 1R18: Plant Modifications

Procedures
EN-DC-115, "Engineering Change Process", Revision 12
EN-WM-107, "Post Maintenance Test," Revision 3

Work Orders
WO 00251793

Miscellaneous Documents
EC 26705, "Instrument Air Dryer D-1-1B Replacement"

Section 1R19: Post-Maintenance Testing

Procedures
EN-WM-107, "Post Maintenance Testing," Revision 3
OP 5343, "Backup Meteorological System Function/Calibration Test," Revision 18

Condition Reports

CR-VTY-2011-03129	CR-VTY-2011-03164	CR-VTY-2011-03704
CR-VTY-2011-03135	CR-VTY-2010-03680	

Work Orders

WO 00248560	WO 00286583	WO 52328477
WO 00251971	WO 00289267	WO 52329824
WO 00270064	WO 00290227	
WO 00270120	WO 00290424	

Drawings
58-845-3-1, "4850 Sq. Ft. Reactor Building Cooling Water System Heat Exchanger," Revision 8

Miscellaneous
Liquid Penetrant Examination 11-092
EC 31192, "Service Water Automatic Strainers Replacement Screws," Revision 0
4181.06, "Flow Rate Testing at RRU's 5,6,7 and 8," September 3, 2011
4181.06, "Flow Rate Testing at RRU's 5,6,7 and 8," September 4, 2011
VY-APF-0315.01, "Equipment Alteration Request" September 18, 2011
5343.03, "Meteorological System Delta Temperature Monitoring Data Sheet," September 12, 2011
5343.02, "Backup Meteorological System Control Requirements Data Sheet," September 12, 2011

Section 1R22: Surveillance Testing

Procedures
OP 4310, "Scram Discharge Instrument Volume High Water Functional/Calibration," Revision 33
OP 4311, "Drywell High Pressure Scram/Isolation Functional Calibration," Revision 34

OP 4152, "Equipment and Floor Drain Sump and Totalizer Surveillance," Revision 48
OP 4179, "Standby Fuel Pool Cooling Surveillance," Revision 21
OP 4360, "HPCI System Actuation Logic Functional Test," Revision 35

Work Orders
WO 52297388 WO 52332435

Drawings
59201613, "Elementary Diagram – HPCI System," Revision 7
59201614, "Elementary Diagram – HPCI System," Revision 8
59201615, "Elementary Diagram – HPCI System," Revision 23
59201612, "Elementary Diagram – HPCI System," Revision 16

Miscellaneous Documents
ESOMS Computerized Rounds, April 1, 2011 through August 1, 2011

Section 1EP6: Drill Evaluation

Procedures
OP 3542, "Operation of the Technical Support Center," Revision 26
OP 3546, "Operation of the Emergency Operations Center," Revision 34

Section 4OA1: Performance Indicator (PI) Verification

Condition Reports

CR-VTY-2010-03519	CR-VTY-2010-04698	CR-VTY-2011-00518
CR-VTY-2010-03580	CR-VTY-2010-04850	CR-VTY-2011-00900
CR-VTY-2010-04025	CR-VTY-2010-05563	CR-VTY-2011-01325
CR-VTY-2010-04594	CR-VTY-2010-05670	CR-VTY-2011-01669
CR-VTY-2010-04653	CR-VTY-2010-05700	CR-VTY-2011-01804

Miscellaneous Documents
Control Room Narrative Logs, June 30, 2010 through July 1, 2011

Section 4OA2: Problem Identification and Resolution

Procedures
EN-WM-105, "Planning," Revision 9
EN-WM-107, "Post Maintenance Testing," Revision 1
EN-WM-107, "Post Maintenance Testing," Revision 2
EN-WM-107, "Post Maintenance Testing," Revision 3
OP 5304, "Maintenance and Testing of General Electric Relays," Revision 11
EGNE-8064, "Non-code Visual Examination Methods as Good Maintenance Practice," Revision 0
EGNE-8064, "Non-code Visual Examination Methods as Good Maintenance Practice," Revision 4
AP 0172, "Work Schedule Risk Management On-Line," Revision 4

EN-WM-104, "On Line Risk Assessment," Revision 4
EN-OP-119, "Protected Equipment Postings," Revision 3

Condition Reports

CR-VTY-2009-01347	CR-VTY-2010-05020	CR-VTY-2011-01184
CR-VTY-2009-01949	CR-VTY-2011-00028	CR-VTY-2011-01999
CR-VTY-2009-02058	CR-VTY-2011-00380	CR-VTY-2011-02272
CR-VTY-2010-00088	CR-VTY-2011-00388	CR-VTY-2011-02887
CR-VTY-2010-00469	CR-VTY-2011-00445	CR-VTY-2011-02983
CR-VTY-2010-01648	CR-VTY-2011-00667	CR-VTY-2011-03452
CR-VTY-2010-04245	CR-VTY-2011-00826	

Work Orders

WO 00200035	WO 00227038	WO 52328215
WO 00218110	WO 00270064	

Section 4OA3: Follow-Up of Events and Notices of Enforcement Discretion

Procedures
OPOP-PHEN-3127, "Natural Phenomena," Revision 3

Condition Reports

CR-VTY-2011-03414	CR-VTY-2011-03419
CR-VTY-2011-03418	CR-VTY-2011-03420

Section 4OA5: Other Activities

Condition Reports

CR-VTY-2011-02543	CR-VTY-2011-02571

Miscellaneous Documents
Calculation No. VYC-3121, "Dry Fuel Storage Reactor Building Assessment for Cask Stack-Up Configuration with Seismic Restraints Attached," Revision 0

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
AP	administration procedure
CFR	Code of Federal Regulations
CR	condition report
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EP	emergency preparedness
HPCI	high pressure coolant injection
ISFSI	Independent Spent Fuel Storage Installation
IST	in-service testing
MPC	multi-purpose canister
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OP	operating procedure
PARS	Publicly Available Records System
PI	performance indicator
PMT	post maintenance testing
RHR	residual heat removal
SSCs	structures, systems and components
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
UPS	uninterruptible power supply
VY	Vermont Yankee
WO	work order