UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

February 10, 2015

EA-14-147

Mr. Eric W. Olson, Site Vice President
Entergy Operations, Inc.
River Bend Station
5485 U.S. Highway 61N
St. Francisville, LA 70775

SUBJECT: RIVER BEND STATION – NRC INTEGRATED INSPECTION REPORT 05000458/2014005

Dear Mr. Olson:

On December 31, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your River Bend Station, Unit 1. On January 20, 2015, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented two findings of very low safety significance (Green) in this report. Both of these findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations consistent with Section 2.3.2.a of the NRC Enforcement Policy.

Further, as described in Section 4OA7 of the enclosed report, inspectors documented a Severity Level IV licensee-identified violation involving actions where a security officer deliberately falsified training records by using a training proctor's login credentials to take three exams necessary to support unescorted access for a subcontractor. Because you are responsible for the actions of your employees, and because the violation involved willful aspects, the violation was evaluated under the traditional enforcement process as set forth in the NRC Enforcement Policy. The NRC determined that because the deliberately falsified test records did not immediately allow for unescorted access to River Bend Station and because you took significant remedial corrective actions, the failure to maintain complete and accurate information will be a Severity Level IV non-cited violation, with no increase in severity due to a deliberate activity. The NRC is treating this violation as a non-cited violation consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violations or significance of these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the River Bend Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC resident inspector at the River Bend Station.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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 (PARS) component of the NRC's Agencywide Documents Access and Management 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/

Jeremy R. Groom, Acting Branch Chief
Project Branch C
Division of Reactor Projects

Docket Nos.: 50-458
License Nos.: NPF-47

Enclosure: Inspection Report 05000458/2014005
w/ Attachment: Supplemental Information

cc w/ encl: Electronic Distribution for River Bend Station

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC resident inspector at the River Bend Station.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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 (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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Letter and Inspection Report to Eric W. Olson from Jeremy R. Groom, dated February 10, 2015

SUBJECT: RIVER BEND STATION - NRC INTEGRATED INSPECTION REPORT 05000458/2014005

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000458
License:	NPF-47
Report:	05000458/2014005
Licensee:	Entergy Operations, Inc.
Facility:	River Bend Station, Unit 1
Location:	5485 U.S. Highway 61N St. Francisville, LA 70775
Dates:	October 1 through December 31, 2014
Inspectors:	J. Sowa, Senior Resident Inspector A. Barrett, Resident Inspector T. Farina, Operations Engineer M. Kennard, Operations Engineer C. Steely, Operations Engineer J. Braisted, PhD, Reactor Inspector
Approved By:	J. Groom, Acting Branch Chief Project Branch C Division of Reactor Projects

SUMMARY

IR 05000458/2014005; 10/01/2014 - 12/31/2014; River Bend Station; Integrated Resident and Regional Report; Licensed Operator Requalification Program and Licensed Operator Performance; Problem Identification and Resolution

The inspection activities described in this report were performed between October 1 and December 31, 2014, by the resident inspectors at River Bend Station and inspectors from the NRC's Region IV office. Two findings of very low safety significance (Green) are documented in this report. Both of these findings involved violations of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR 55.46, "Simulation Facilities," for the failure of the licensee to retain the results of required performance tests for four years after completion, or until superseded by updated test results. The licensee could not locate scenario-based testing documentation conducted for the March 2014 initial license exam. The licensee asserted in writing that the testing was performed, but that the electronic test packages had been lost. This issue was entered into the licensee's corrective action program as CR-RBS-2014-04595.

  The failure of the licensee's training staff to retain the results of scenario-based testing for four years or until superseded was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it meets the more-than-minor example of Inspection Manual Chapter 0612, Appendix E, Example 1.b, which states that a record keeping issue is "Not minor if: Required records were irretrievably lost." This is associated with the human performance attribute of the mitigating systems cornerstone and it adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, because of the lack of documentation the licensee was unable to demonstrate that its scenario-based testing would ensure the simulator is capable of producing the expected reference unit response without significant performance discrepancies, or deviation from an approved scenario sequence, for scenarios used to evaluate licensed operators and applicants. Using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheets, and the corresponding Appendix I, "Licensed Operator Requalification Significance Determination Process" (block 14), the finding was determined to have very low safety significance (Green) because it is a "Simulator Testing, Maintenance, or Modification Deficiency." This finding has a cross-cutting aspect in the procedure adherence component of the human performance cross-cutting area because the licensee failed to ensure that individuals follow processes, procedures, and work instructions [H.8]. (Section 1R11.3)

- Green. The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a, "Procedures," for the failure to develop lubrication schedules to ensure the reliability of safety-related motor operated valves (MOV). Specifically, the station failed

to properly lubricate the residual heat removal B heat exchanger bypass valve E12-MOV-48B which resulted in the failure of the valve to open when demanded during a system restoration alignment. The station repaired the valve, lubricated the torque arm bearing and all potentially affected torque arm bearings on similar motor operated valves, and updated the preventive maintenance procedure to include lubrication of torque arm bearings. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-04327.

The inspectors determined that the failure of the licensee to promptly implement preventive maintenance to lubricate Velan-style MOV torque arm bearings was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, E12-MOV-48B could not have performed its safety function to open upon a low pressure core injection initiation signal, due to the lack of lubrication on the valve's torque arm bearing. The senior resident inspector performed the initial significance determination for the inoperable Division II residual heat removal heat exchanger bypass valve. The inspector used the NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," dated June 19, 2012, to evaluate this issue. The finding required a detailed risk evaluation because it involved the potential loss of a single train of safety equipment for longer than the technical specification allowed outage time. The exposure period was 8 days. A Region IV senior reactor analyst performed a detailed risk evaluation for this issue and determined that the change to the core damage frequency was much less than 1E-6, and therefore the finding was determined to be of very low safety significance (Green). The diverse coolant injection pathways helped to minimize the risk. This performance deficiency occurred in 2000 and, is not reflective of current licensee performance. (Section 4OA2.3)

Licensee-Identified Violations

One Severity Level IV violation that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and associated corrective action tracking numbers are listed in Section 4OA7 of this report.

PLANT STATUS

The River Bend Station began the inspection period at 100 percent reactor power. It departed from full power as follows:

- On October 17, 2014, the plant scrammed from full power. The licensee restarted the reactor on October 22, 2014, and returned the plant to full power on October 27.

- On December 11, 2014, operators reduced power to 85 percent for a rod sequence exchange. On December 12, 2014, while at 85 percent, the station received a reactor recirculation pump flow control valve runback and power was reduced to 74 percent. The licensee returned the plant to full power on December 13.

- On December 23, 2014, operators reduced power to 85 percent for feedwater pump maintenance. The plant scrammed from 85 percent power on December 25, 2014, following a trip of the B reactor protection system (RPS) motor generator (MG) set. At the time of the MG set trip, a Division 1 half scram existed due to an unrelated equipment issue with a relay for the #2 turbine control valve fast closure RPS function. The combination of the B RPS MG set trip and the Division 1 half scram satisfied the logic for a full scram. The licensee restarted the reactor on December 27 and the plant was at 85 percent power at the end of December 31, 2014.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

On November 10, 2014, the inspectors completed an inspection of the station's readiness for seasonal extreme weather conditions. The inspectors reviewed the licensee's adverse weather procedures for seasonal extreme low temperatures and evaluated the licensee's implementation of these procedures. The inspectors verified that prior to the onset of seasonal extreme cold weather, the licensee had corrected weather-related equipment deficiencies identified during the previous seasonal extreme cold weather season.

The inspectors selected two risk-significant systems that were required to be protected from cold weather:

- Control building chilled water system
- Instrument air system

The inspectors reviewed the licensee's procedures and design information to ensure the systems would remain functional when challenged by adverse weather. The inspectors verified that operator actions described in the licensee's procedures were adequate to

maintain readiness of these systems. The inspectors walked down portions of these systems to verify the physical condition of the adverse weather protection features.

These activities constituted one sample of readiness for seasonal adverse weather, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On October 14, 2014, the inspectors completed an inspection of the station's readiness for impending adverse weather conditions due to a tornado watch on October 13, 2014. The inspectors reviewed plant design features, the licensee's procedures to respond to severe thunderstorm warnings and tornado watches, and the licensee's planned implementation of these procedures. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant.

These activities constituted one sample of readiness for impending adverse weather conditions, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on four plant areas important to safety:

- October 9, 2014, low pressure core spray pump room, fire area AB-6/Z-1
- October 9, 2014, containment airlock area, fire area AB-15/Z-5
- November 20, 2014, standby switchgear 1A room, fire area C-15
- November 20, 2014, standby switchgear 1B room, fire area C-14

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted four quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed licensee programs to verify heat exchanger performance and operability for the following heat exchangers:

- Residual heat removal heat exchanger E12-EB001B
- Spent fuel pool heat exchanger SFC-E2B
- Reactor plant component cooling water heat exchanger CCP-E1A

The inspectors verified whether testing, inspection, maintenance, and chemistry control programs are adequate to ensure proper heat transfer. The inspectors verified that the periodic testing and monitoring methods, as outlined in commitments to NRC Generic Letter 89-13, utilized proper industry heat exchanger guidance. Additionally, the inspectors verified that the licensee's chemistry program ensured that biological fouling was properly controlled between tests. The inspectors reviewed previous maintenance records of the heat exchangers to verify that the licensee's heat exchanger inspections adequately addressed structural integrity and cleanliness of their tubes. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three triennial heat sink inspection samples, as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On October 28, 2014, the inspectors observed simulator training for an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the requalification activities.

These activities constitute completion of one quarterly licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

On October 22, 2014, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity due to plant startup following a forced maintenance outage.

In addition, the inspectors assessed the operators' adherence to plant procedures, including the conduct of operations procedure and other operations department policies.

These activities constitute completion of one quarterly licensed operator performance sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.3 Biennial Inspection of Licensed Operator Requalification Program

The licensed operator requalification program involves two training cycles that are conducted over a two year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination.

a. Inspection Scope

To assess the performance effectiveness of the licensed operator requalification program, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors interviewed five licensee personnel, consisting of three operators and two instructors, to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written exams and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included five job performance measures and three scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of five licensed operators for conformance to license conditions and the licensee's system for tracking qualifications and records of license reactivation for six operators.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry

events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors", Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator testing and fidelity, and existing logs of simulator deficiencies.

On October 3, 2014, the licensee informed the lead inspector of the results of the written examinations and operating tests for the Licensed Operator Requalification Program. The inspectors compared these results to the Appendix I, "Licensed Operator Requalification Significance Determination Process," values and determined that there were no findings based on these results.

The inspectors completed one inspection sample of the biennial licensed operator requalification program.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 55.46, "Simulation Facilities," for the failure of the licensee to retain the results of required performance tests for four years after completion, or until superseded by updated test results. The licensee could not locate scenario-based testing documentation conducted for the March 2014 initial license exam. The licensee confirmed in writing that the testing was performed, but that the electronic test packages had been lost.

Description. During the week of September 15, 2014, while performing a biennial requalification inspection in accordance with Inspection Procedure 71111.11, "Licensed Operator Requalification Program and Licensed Operator Performance," the inspectors requested to review documentation of the scenario-based testing performed for the March 2014 initial license exam scenarios. The licensee was unable to locate the documentation that week, but hoped to locate it the following week upon the return of a knowledgeable individual. On September 26, the licensee informed the lead inspector that the documentation still could not be located, and was considered lost.

Title 10 CFR 55.46, "Simulation Facilities," Section (d)(1) requires that "The results of performance tests must be retained for four years … or until superseded by updated test results." Entergy procedure EN-TQ-202, Revision 9, "Simulator Configuration Control," Section 7.3 also states that "The results of performance tests shall be retained for four years" or until superseded. EN-TQ-210, Rev. 8, "Conduct of Simulator Training," requires in part that "All validation documentation of NRC Initial Exam scenarios (SBT requirements)" be submitted for record retention.

In order to determine that the testing actually occurred, the licensee interviewed two operations training individuals who were involved in the validation and collection of the scenario-based testing data for the March 2014 initial license exam. These individuals separately described the collection of the data for the exam between March 1 and 3, 2014, its transfer onto a USB jump drive, and its storage in the exam development room's secure storage cabinet. This jump drive was stored in the cabinet at least until completion of the exam and relaxation of exam security, in early April 2014.

The data was not transferred to the superintendent, simulator support, for final storage as required, and its ultimate fate is unknown. The individuals involved in the testing, provided a signed statement to the inspectors asserting that they performed the testing as described. As an immediate corrective action, the licensee re-performed scenario-based testing for the March 2014 initial licensing exam scenarios during the week of September 22, 2014, and retained the documentation. This issue was entered into the licensee's corrective action program as CR-RBS-2014-04595.

Analysis. The failure of the licensee's training staff to retain the results of scenario-based testing for four years as required by 10 CFR 55.46 was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it meets the more than minor example of Inspection Manual Chapter 0612, Appendix E, Example 1.b, which states that a record keeping issue is "Not minor if: Required records were irretrievably lost." This is associated with the human performance attribute of the mitigating systems cornerstone and it adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, because of the lack of documentation the licensee was unable to demonstrate that its scenario-based testing would ensure the simulator is capable of producing the expected reference unit response without significant performance discrepancies, or deviation from an approved scenario sequence, for scenarios used to evaluate licensed operators and applicants. Using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheets, and the corresponding Appendix I, "Licensed Operator Requalification Significance Determination Process," the finding was determined to have very low safety significance (Green) because it is a "Simulator Testing, Maintenance, or Modification Deficiency."

This finding has a cross-cutting aspect in the human performance area of procedure adherence. Specifically, the licensee failed to ensure that individuals follow processes, procedures, and work instructions, by failing to forward the completed scenario-based testing packages to the superintendent of simulator support for retention, as required by EN-TQ-210, Revision 8, "Conduct of Simulator Training" [H.8].

Enforcement. Title 10 CFR 55.46, "Simulation Facilities," Section (d)(1) requires that "The results of performance tests must be retained for four years … or until superseded by updated test results." Contrary to the above, the licensee failed to retain documentation of the scenario-based testing performed for the March 2014 initial license exam. The licensee asserted in writing that the testing was performed between March 1 and 3, 2014, but that records of the testing were lost after relaxing exam security in early April, 2014. The inspectors determined that there was no actual or potential safety consequence, because the testing was actually performed. As an immediate corrective action, scenario-based testing was re-performed for the March 2014 initial license exam scenarios, and documentation retained. The licensee has also submitted a change request for procedure EN-TQ-105, "NRC Initial License Exam Development and Administration," to add a step requiring submittal of performance testing documentation to the superintendent, simulator and training support for retention. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as CR-RBS-2014-04595, it is being treated as a non-cited violation consistent with Section 2.3.2.a of the Enforcement Policy. (NCV 05000458/2014005-01, "Failure to Retain Scenario-Based Testing Documentation")

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

a. Inspection Scope

On October 23, 2014, the inspectors reviewed a risk assessment performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to the elevated risk caused by the control building chilled water system chiller C being inoperable during startup from Forced Outage 14-01.

The inspectors verified that this risk assessment was performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessment and verified that the licensee implemented appropriate risk management actions based on the result of the assessment.

These activities constitute completion of one maintenance risk assessments and emergent work control inspection sample, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed four operability determinations and functionality assessment that the licensee performed for degraded or nonconforming structures, systems, and components:

- October 7, 2014, operability determination of suppression pool leakage (CR-RBS-2014-03353)
- October 7, 2014, functionality assessment of condensate pump P1A (CR-RBS-2014-04888)
- October 21, 2014, operability determination of the reactor core isolation cooling trip throttle valve failure to reset (CR-RBS-2014-05310)
- October 23, 2014, operability determination of high shutdown cooling suction pressure during startup from Forced Outage 14-01 (CR-RBS-2014-05314)

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded structures, systems, and components to be operable or functional, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability or functionality. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability or functionality of the degraded structures, systems, and components.

These activities constitute completion of four operability and functionality review samples, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed five post-maintenance testing activities that affected risk-significant structures, systems, and components:

- October 15, 2014, WO 52574888, "EJS-SWG1A-ACB006-TX Perform Contact Cleaning"
- October 15, 2014, WO 52575128, "EJS-SWG1A-ACB006-52XX Perform Contact Cleaning"
- October 21, 2014, WO 52528936, "Lubricate and Adjust RCIC Trip Throttle Valve Operator Mechanism"
- November 3, 2014, WO 00396351, "Repair Elbow Leak on Purge Compressor HVK-CHL1C"
- November 13, 2014, WO 00397449, "EDG 1A Failed to Start During STP-309-0206"

The inspectors reviewed licensing- and design-basis documents for the structures, systems, and components and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected structures, systems, and components.

These activities constitute completion of five post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

During the station's maintenance outage that concluded on October 23, 2014, the inspectors evaluated the licensee's outage activities. The inspectors verified that the licensee considered risk in developing and implementing the outage plan, appropriately

managed personnel fatigue, and developed mitigation strategies for losses of key safety functions. This verification included the following:

- Review of the licensee's outage plan prior to the outage
- Monitoring of shut-down and cool-down activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Monitoring of heat-up and startup activities

These activities constitute completion of one outage activities sample, as defined in Inspection Procedure 71111.20.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed three risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the structures, systems, and components were capable of performing their safety functions:

Other surveillance tests:

- October 9, 2014, STP-205-6301, "Division I Low Pressure Core Spray Pump and Valve Operability Test," performed on October 7, 2014

- November 12, 2014, STP-203-6305, "HPCS Quarterly Pump and Valve Operability Test," performed on September 23, 2014

- November 14, 2014, STP-0309-0206, "Division I Diesel Generator 184 Day Operability Test," performed on November 6, 2014

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the test satisfied appropriate acceptance criteria. The inspectors verified that the licensee restored the operability of the affected structures, systems, and components following testing.

These activities constitute completion of three surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors observed an emergency preparedness drill on October 7, 2014, to verify the adequacy and capability of the licensee's assessment of drill performance. The inspectors reviewed the drill scenario, observed the drill from the Technical Support Center, Simulator Control Room, Operations Support Center, and the Emergency Operations Facility, and attended the post-drill critique. The inspectors verified that the licensee's emergency classifications, off-site notifications, and protective action recommendations were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the licensee in the post-drill critique and entered into the corrective action program for resolution.

These activities constitute completion of one emergency preparedness drill observation sample, as defined in Inspection Procedure 71114.06.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

4OA1 Performance Indicator Verification (71151)

.1 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors reviewed the licensee's reactor coolant system chemistry sample analyses for the period of October 2013 through September 2014 to verify the accuracy and completeness of the reported data. The inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample on November 20, 2014. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system specific activity performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Reactor Coolant System Total Leakage (BI02)

a. Inspection Scope

The inspectors reviewed the licensee's records of reactor coolant system total leakage for the period of October 2013 through September 2014 to verify the accuracy and completeness of the reported data. The inspectors observed the performance of the RCS leakage surveillance procedure on November 12, 2014. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system leakage performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program and periodically attended the licensee's condition report screening meetings. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify adverse trends. The inspectors focused their review on maintenance effectiveness, but also considered the results of daily corrective action item screening discussed in Section 4OA2.1, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 7-month period of June 2014 through December 2014; although, some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the station's trending reports were reviewed for adequacy.

These activities constitute completion of one semi-annual trend review sample, as defined in Inspection Procedure 71152.

b. Findings and Observations

No findings were identified, but the inspectors did have the following observations:

The inspectors reviewed equipment failures documented in the corrective action program for potential trends that had not been identified by the licensee. In addition, the inspectors assessed the effectiveness of maintenance to improve the equipment reliability at the station.

The inspectors identified an adverse trend in procedural adherence throughout the assessment period, specifically in the area of Operations and Maintenance. These previously identified failures have resulted in tagging errors, failure of the Division III emergency diesel generator to start during surveillance testing, and prolonged equipment unavailability (control building chilled water system 1A).

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected two issues for an in-depth follow-up:

- On August 31, 2014, the station experienced a failure of residual heat removal (RHR) B heat exchanger bypass valve E12-MOV-48B. The valve failed to open during system restoration from a bi-weekly heat exchanger flush. The station documented the event in Condition Report CR-RBS-2014-04307, and performed an apparent cause analysis. The station identified the cause to be that the existing preventive maintenance procedures did not contain instructions to lubricate the torque arm bearing associated with the motor operated valve (MOV). The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to prevent recurrence.

- On November 17, 2014, the inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, and compensatory actions for issues associated with operator workarounds. The inspectors then assessed the impact of the cumulative effect of the workarounds. The inspectors verified that the licensee appropriately prioritized the planned corrective actions, that these actions were adequate to correct the conditions,

and that the overall impact of all of the conditions did not adversely impact the plant.

These activities constitute completion of two annual follow-up samples, which included one operator work-around sample, as defined in Inspection Procedure 71152.

b. Findings

Introduction. The inspectors reviewed a self-revealing, Green non-cited violation of Technical Specification 5.4.1.a., "Procedures," for the failure to develop lubrication schedules to ensure the reliability of safety-related MOVs. Specifically, the station failed to properly lubricate the RHR B heat exchanger bypass valve which resulted in the failure of the valve to open when demanded during a system restoration alignment.

Description. E12-MOV-48B is the RHR loop B heat exchanger bypass valve. This valve has a safety function in the open position to allow water flow to the reactor vessel upon a low pressure coolant injection (LPCI) initiation. This AC powered, Velan-style MOV is normally open but receives an automatic open signal upon a LPCI initiation. On August 31, 2014, operators secured RHR B train from its suppression pool cooling mode, which was utilized for a bi-weekly heat exchanger flush. While stroking the heat exchanger bypass valve open, the main control room received an alarm indicating that RHR B was inoperative. In addition, operators noted erratic indication on E12-MOV-48B. Upon inspection, the licensee identified that the valve had failed to open, and that the valve motor was hot to the touch. The valve's torque arm bearing was determined to have been binding and had unwound and fallen off the assembly. The station determined that E12-MOV-48B failed to open because the torque arm bearing was not sufficiently lubricated.

The licensee reviewed preventive maintenance instructions for this MOV and similar valves, and determined the preventive maintenance procedure did not include instructions to inspect or lubricate the torque arm bearing. The station had previously documented a similar failure of E12-MOV-48A where the torque arm bearing fell off the assembly on May 17, 2000. The station did not identify the need to lubricate torque arm bearings at the time, and considered the failure to be an isolated incident. Upon determining E12-MOV-48B failed as a result of lack of lubrication on the torque arm bearing, the station immediately updated preventive maintenance procedures to lubricate the bearing and performed the updated preventive maintenance on E12-MOV-48B, and all identified similar MOVs to ensure proper lubrication of the torque arm bearing.

Analysis. The inspectors determined that the failure of the licensee to promptly implement preventive maintenance to lubricate Velan-style MOV torque arm bearings was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, E12-MOV-48B could not have performed its safety function to open, on a LPCI initiation signal, due to the lack of lubrication on the valve's torque arm bearing.

The senior resident inspector used NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," dated June 19, 2012, to evaluate this issue. The finding required a detailed risk evaluation because it involved the potential loss of a single train of safety equipment for longer than the technical specification allowed outage time. The exposure period was 8 days. A Region IV senior reactor analyst performed a detailed risk evaluation for this issue.

The analyst used the River Bend Standardized Plant Analysis Risk (SPAR) model, Revision 8.20, to evaluate the change to the core damage frequency (delta-CDF) associated with this finding. The bypass valve was utilized by operators to throttle flow around the RHR heat exchangers for reactor coolant temperature control during shutdown cooling operations. The valve has a close safety function to ensure that cooling water does not entirely bypass the heat exchangers. The valve had recently successfully closed but would not re-open. Operators can operate shutdown cooling with this valve fully closed, but reactor coolant temperature control may require starting and stopping the pump. The valve also has an open safety function so that water can bypass the heat exchangers in the low pressure coolant injection mode, when the heat exchangers are not required. However, if this valve failed in the closed position, the resultant flow through the heat exchangers would be adequate to perform the probabilistic risk function of injecting water to the core. Consequently, none of the probability risk assessment functions were significantly affected by the finding. Further, the failure to open function was not modeled in the NRC SPAR model and was considered a negligible contributor to core damage. The purpose of the significance determination process is to assess the potential for significant core damage. There was no quantifiable increase in the core damage frequency from this finding. The change to the core damage frequency was much less than 1E-6, and therefore the finding is determined to be of very low safety significance (Green). The diverse coolant injection pathways helped to minimize the risk.

While processing this issue, the analyst identified an error in the River Bend SPAR model. Basic event HPI-PHN-FR-CFAILED, containment failure causes loss of high pressure injection, was not a valid event at River Bend. While this event has its origins in BWR-4 SPAR models, it was also included in some of the BWR-6 models. Containment failure will not cause the loss of high pressure injection at River Bend. The analyst set this basic event to zero.

The inspectors determined that the apparent cause of the performance deficiency was the station's failure to take effective corrective actions to address issues in a timely manner commensurate with their safety significance. However, the performance deficiency occurred in 2000, and is not reflective of current licensee performance. Therefore, no cross-cutting aspect was identified for this finding.

Enforcement. Technical Specification 5.4.1.a, “Procedures,” requires, in part, that written procedures be established, implemented, and maintained as recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Paragraph 9.b of Regulatory Guide 1.33, Appendix A, requires, in part, that preventive maintenance schedules should be developed to specify lubrication schedules. Contrary to the above, between May 17, 2000, and August 31, 2014, the licensee failed to establish preventive maintenance lubrication schedules for Velan-style MOV torque arm bearings. Because this violation was of very low safety significance and entered into the licensee’s corrective action program as Condition Report CR-RBS-2014-04327, this violation is

being treated as a non-cited violation, consistent with Section 2.3.2.a of the NRC's Enforcement Policy: (NCV 05000458/2014005-02, "Failure to Lubricate Residual Heat Exchanger Bypass Valves")

4OA6 Meetings, Including Exit

Exit Meeting Summary

On September 19, 2014, the inspectors debriefed Mr. Bill Mashburn, Director, Engineering, and other members of the licensee's staff of the results of the licensed operator requalification program inspection, and telephonically exited with Mr. Eric Olson, Site Vice President, and other staff members on October 14, 2014. The licensee representatives acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On November 21, 2014, the inspector presented the final inspection results to Mr. E. Olson, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 20, 2015, the inspectors presented the integrated inspection results to Mr. E. Olson, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On January 28, 2015, the inspectors presented the inspection results to Mr. T. Brumfield, Director, Regulatory & Performance Improvement, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

4OA7 Licensee-Identified Violations

The following Severity Level IV violation was identified by the licensee and is a violation of NRC requirements, which meet the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- Title 10 of the Code of Federal Regulations, Part 50.9(a), states, in part, that information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects. Technical Specification, Section 5.4.1 states, in part, that written procedures shall be established, implemented, and maintained covering the following activities in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, 7.e, "Radiation Protection Procedures" states, in part, that training in radiation protection should be covered by written procedures. River Bend Station administrative procedure EN-TQ-107, "General Employee Training" Revision 9, states, in part, that the requalification training program for unescorted access requires: 1) Generic Plant Access Training; 2) Generic Fitness-for-Duty and Behavior Observation; and 3) Generic Radiation Worker Training. The procedure establishes those requirements, methods, and responsibilities necessary to support unescorted access to the Protected Area and Radiological Controlled Area. River Bend Station administrative procedure EN-TQ-212, "Conduct of Training and Qualification" Revision 13, Section 4.0[1](c),

states, in part, that Entergy personnel are responsible for maintaining qualification and training records for supplemental personnel in a format that is accurate, complete and easily usable.

Contrary to the above, on October 6, 2013, the licensee failed to maintain training records as complete and accurate in all material respects. The training records were incomplete and inaccurate because the Security Officer took three tests representing someone other than herself. The tests results are material to the NRC in that the NRC relies on these test results for demonstration that licensee supplemental personnel (subcontractor) have been provided with appropriate training for access authorization to the Protected Area and Radiological Controlled Area.

Because the incomplete and inaccurate test information did not allow for unescorted access to River Bend Station and because the licensee took significant remedial corrective actions, the NRC determined this to be a Severity Level IV non-cited violation, with no increase in severity due to deliberateness. Therefore, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy. The violation was entered into the licensee's correction action program as Condition Report CR-RBS-2013-06417.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Brumfield, Director, Regulatory & Performance Improvement
D. Burnett, Manager, Emergency Planning
G. Bush, Manager, Material, Procurement, and Contracts
M. Chase, Manager, Training
J. Clark, Manager, Regulatory Assurance
B. Cole, Manager, Radiation Protection
F. Corley, Manager, Design & Program Engineering
E. DeWeese, Engineering
S. Durbin, Superintendent, Nuclear Operations Training
B. Ford, Senior Manager, Fleet Regulatory Assurance
R. Gadbois, General Manager, Plant Operations
T. Gates, Manager, Operations Support
K. Hallaran, Manager, Chemistry
J. Henderson, Assistant Manager, Operations
K. Huffstatler, Senior Licensing Specialist, Licensing
P. Lucky, Manager, Performance Improvement
J. Maher, Manager, Systems & Components Engineering
W. Mashburn, Director, Engineering
E. Olson, Site Vice President
W. Renz, Director, Emergency Planning, Entergy South
J. Reynolds, Senior Manager, Maintenance
T. Santy, Manager, Security
T. Shenk, Manager, Operations
J. Vukovics, Supervisor, Reactor Engineering
J. Wieging, Senior Manager, Production
D. Yoes, Manager, Quality Assurance

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000458/2014-005-01	NCV	Failure to Retain Scenario-Based Testing Documentation (Section 1R11.3)
05000458/2014-005-02	NCV	Failure to Lubricate Residual Heat Exchanger Bypass Valves (Section 4OA2.3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Condition Reports

CR-RBS-2014-05079 CR-RBS-2014-05087

Procedures

Number	Title	Revision
AOP-0029	Severe Weather Operation	030
OSP-0043	Freeze Protection and Temperature Maintenance	024

Work Orders

WO 00259332 WO 00365616 WO 00371630 WO 00371631 WO 00371635
WO 00373932 WO 00392928 WO 00392929

Section 1R05: Fire Protection

Condition Report

CR-RBS-2014-04551

Procedures

Number	Title	Revision
AB-070-501	LPCS Pump Room Fire Area AB-6/Z-1	4
AB-170-537	Containment Airlock Area Fire Area AB-15/Z-5	2
CB-098-117	Standby Switchgear 1B Room Fire Area C-14	4
CB-098-118	Standby Switchgear 1A Room Fire Area C-15	2

Section 1R07: Heat Sink Performance

Calculations

Number	Title	Revision/Date
0221.432-000-019A	RHR Heat Exchanger Calculated Performance	June 25, 1990
221.900-HBF-1720	Component Support Fuel Pool Cooling Heat Exchanger	2
223.312.-022	Nozzle Load and Seismic Stress Analysis for Fuel Pool Coolers	4

Calculations

Number	Title	Revision/Date
G13.18.10.2*38	Evaluate Steady-State Vibration in RHR Test Return Lines	1
G13.18.14.0*183	Required SSW Flow Rate into the SFC Heat Exchangers	2
PN-235	RPCCW System Heat Exchanger Sizing	0
PN-311	Spent Fuel Pool Temperatures for Normal and Abnormal Heat Loads for Compliance with NRC Standard Review Plan 9.1.3.	2

System Health Reports

Number	Title	Date
115	Closed Cooling Water - Reactor Plant	Q3-2014
204	Residual Heat Removal - LPCI	Q3-2014

Thermal Performance Analyses

Number	Title	Revision
RBS-EP-12-00001	RHR Heat Exchangers E12-EB001B and E12-EB001D Heat Transfer Capacity Verification March 28, 2012	0

System Design Criteria

Number	Title	Revision
SDC-115	Reactor Plant Component Cooling Water System	1
SDC-204	Residual Heat Removal System	4

Miscellaneous

Number	Title	Revision/Date
	Closed Cooling Water Systems Strategic Plan	3
	Strategic Chemistry Plan	7
221.920	Design Specification for Fuel Pool Cooling and Clean-Up Heat Exchanger Supports	1
223.312	Specification for Fuel Pool Coolers	May 7, 1973
3223.312-022-008A	Heat Exchanger Flow Rate Information	December 8, 1997

Miscellaneous

Number	Title	Revision/Date
3237.210-005-001B	Installation Operation and Maintenance Instructions for Reactor Component Cooling Water Heat Exchanger	September 28, 1978
HI-931083	Validation Manual for Computer Code ST_XPERT	3
Task 10774	Perform Flow Balance/Flow Verification on Normal Service Water and Standby Service Water Systems	October 5, 2001

Drawings

Number	Title	Revision
0223.312-002-005	Tube Layout for 28'' I.D. Heat Exchanger	0
0232.900-803-013	Residual Heat Removal Heat Exchanger 1E12*B001B Waterbox: Inlet/Outlet	C
KA-0232.900-803-004	Reactor Plant Component Cooling Water Heat Exchanger 1CCP-E1A Waterbox Inlet	0
PID-34-02A	Fuel Pool Cooling	21
PID-34-02B	Fuel Pool Cooling	19

Procedures

Number	Title	Revision/Date
EN-DC-184	NRC Generic Letter 89-13 Service Water Program	3
EN-DC-316	Heat Exchanger Performance and Condition Monitoring	6
SEP-HX-RBS-001	Service Water Heat Exchanger Inspections	1
SEP-HX-RBS-002	Performance Monitoring Program for the Residual Heat Removal Heat Exchangers E12-EB001B and E12-EB001D (Division II)	6
SEP-SW-RBS-001	RBS GL89-13 Service Water Heat Exchanger Program	0
T10284	Division II SWP Flow Test	October 30, 2014
T9511	RHR Heat Exchanger Inspection	November 9, 2014
STP-602-6312	Division II Fuel Pool Cooling Pump and Valve Operability Test	305
SOP-0042	Standby Service Water System (System #256)	39

Condition Reports (Reviewed during Inspection)

CR-RBS-2011-05713	CR-RBS-2011-07713	CR-RBS-2011-08631	CR-RBS-2011-08680
CR-RBS-2012-01191	CR-RBS-2012-01217	CR-RBS-2012-02983	CR-RBS-2012-06930
CR-RBS-2012-06951	CR-RBS-2012-06966	CR-RBS-2012-07163	CR-RBS-2012-07268
CR-RBS-2013-03975	CR-RBS-2013-05096		

Condition Reports (Initiated during Inspection)

CR-RBS-2014-05887	CR-RBS-2014-05924	CR-RBS-2014-05936	CR-RBS-2014-05976

Work Orders

50967574	00329151	51008285	5034491	50353437

License Commitments

P-15854	P-08340	P-15856	P-15857	P-15858

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Condition Reports

CR-RBS-2012-0477	CR-RBS-2012-4933	CR-RBS-2012-7835	CR-RBS-2013-2493
CR-RBS-2013-2554	CR-RBS-2013-3328	CR-RBS-2013-3354	CR-RBS-2013-3485
CR-RBS-2013-7482	CR-RBS-2014-1176	CR-RBS-2014-1220	CR-RBS-2014-1774
CR-RBS-2014-2489	CR-RBS-2014-2493	CR-RBS-2014-3087	CR-RBS-2014-3633
CR-RBS-2014-4212	CR-RBS-2014-4286	CR-RBS-2014-4458	CR-RBS-2014-4564
DR-14-0018	DR-14-0030	DR-14-0032	DR-14-0034

Miscellaneous Documents

Number	Title	Date
N/A	Baseline Data – Transient Test – Manual Scram	January 15, 2004
N/A	Baseline Data - Transient Test – Simultaneous Trip of all Feedwater Pumps	August 28, 2007
N/A	Baseline Data - Transient Test – Simultaneous Closure of all Main Steam Isolation Valves	August 28, 2007
N/A	Baseline Data - Transient Test – Single Recirculation Pump Trip	December 2012
N/A	Reactor Core Performance Testing – Cold Startup	January 17, 2014
N/A	Reactor Core Performance Testing – BWR Power Coefficient of Reactivity and Control Rod Worth	October 25, 2013

Miscellaneous Documents

Number	Title	Date
N/A	Reactor Core Performance Testing – BWR Xenon Worth	June 21, 2013
N/A	Simulator Operability Test – Steady State	August 25, 2014
N/A	Post-event Scenario Testing 12-01 - Turbine-Generator Trip/Reactor Scram from 100% Power	February 14, 2012
N/A	Post-event Scenario Testing 13-02 - "C" FW Reg Valve Fails Open	February 16, 2014
N/A	Complete Operating Test – Week of 8/25/2014	August 25, 2014
N/A	Complete Operating Test – Week of 9/1/2014	September 1, 2014
N/A	Complete Operating Test – Week of 9/15/2014	September 15, 2014
N/A	Complete Written Exam – Week of 8/25/2014	August 25, 2014
CR-RBS-2014-1218	Apparent Cause Evaluation – Simulator Fidelity Issues	April 8, 2014
OLTS Report 9	Active Operators Count – RBS	September 3, 2014
OLTS Report 14	License Restriction Report – RBS	September 3, 2014
RBS-TT-01	Transient Test – Manual Scram	October 17, 2013
RBS-TT-02	Transient Test – Simultaneous Trip of all Feedwater Pumps	October 17, 2013
RBS-TT-03	Transient Test – Simultaneous Closure of all Main Steam Isolation Valves	October 17, 2013
RBS-TT-05	Transient Test – Single Recirculation Pump Trip	October 24, 2013

Procedures

Number	Title	Revision/Date
AOP-0001	Reactor Scram	28
AOP-0007	Loss of Feedwater Heating	29
AOP-0008	Loss of Instrument Air	37
AOP-0010	Loss of One RPS Bus	19

Procedures

Number	Title	Revision/Date
AOP-0024	Thermal Hydraulic Stability Controls	25
AOP-0027	Fuel Handling Mishaps	28
AOP-0028	Seismic Event	11
AOP-0051	Loss of Decay Heat Removal	312
EIP 2-001	Classification of Emergencies	24
EN-TQ-112	Medical Program	12
EN-TQ-114	Licensed Operator Requalification Training Program Description	9
EN-TQ-202	Simulator Configuration Control	9
EOP-0001	RPV Control	26
EOP-0001A	RPV Control, ATWS	26
EOP-0002	Emergency Operating Procedure – Primary Containment Control	15
EOP-0005, Enclosure 10	De-energizing Scram Solenoids	314
EOP-0005, Enclosure 15	Alternate SLC Injection	314
FHP-0001	Control of Fuel Handling and Refueling Operations	35
GOP-0002	Power Decrease / Plant Shutdown	68
OSP-0022	RBS Operating Manual Operations Sections Procedure	73
OSP-0053 Attachment 13	Initiating Standby Liquid Control	22
OSP-0066 Attachment 9	RCIC Alternate Flow Indication and RPV Water Level Indication	23
R-DAD-TQ-019	RBS Simulator Software Configuration Control and Verification Testing	00
R-DAD-TQ-024	RBS Simulator Performance Testing	00

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Condition Reports

CR-RBS-2014-05246 CR-RBS-2014-05256 CR-RBS-2014-05294 CR-RBS-2014-05448

Procedure

Number	Title	Revision
ADM-0096	Risk Management Program Implementation and On-Line Maintenance Risk Assessment	315

Technical Document

Number	Title	Revision
NUMARC 93-01	Nuclear Energy Institute Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	4A

Section 1R15: Operability Determinations and Functionality Assessments

Condition Reports

CR-RBS-2014-03353 CR-RBS-2014-03509 CR-RBS-2014-03532 CR-RBS-2014-03778
CR-RBS-2014-04004 CR-RBS-2014-04328 CR-RBS-2014-05130

Procedure

Number	Title	Revision
STP-207-4536	RCIC Isolation - RCIC Steam Line Flow High Channel Functional Test (E31-N683A, E31-N690A, E51A-K64)	302

Work Order

WO 00381261

Section 1R19: Post-Maintenance Testing

Condition Reports

CR-RBS-2014-05256 CR-RBS-2014-05662

Maintenance Documents

EN-WM-105 WO 00396351 WO 00397449 WO 52528936 WO 52574888
WO 52575128

Section 1R20: Refueling and Other Outage Activities

Condition Reports

CR-RBS-2014-04926 CR-RBS-2014-04967 CR-RBS-2014-05130 CR-RBS-2014-05162
CR-RBS-2014-05175 CR-RBS-2014-05178 CR-RBS-2014-05182 CR-RBS-2014-05185
CR-RBS-2014-05186 CR-RBS-2014-05191 CR-RBS-2014-05194 CR-RBS-2014-05199
CR-RBS-2014-05200 CR-RBS-2014-05206 CR-RBS-2014-05209 CR-RBS-2014-05211

CR-RBS-2014-05222	CR-RBS-2014-05223	CR-RBS-2014-05225	CR-RBS-2014-05226
CR-RBS-2014-05227	CR-RBS-2014-05230	CR-RBS-2014-05231	CR-RBS-2014-05243
CR-RBS-2014-05244	CR-RBS-2014-05245	CR-RBS-2014-05246	CR-RBS-2014-05256
CR-RBS-2014-05258	CR-RBS-2014-05294	CR-RBS-2014-05295	CR-RBS-2014-05297
CR-RBS-2014-05322	CR-RBS-2014-05323	CR-RBS-2014-05324	CR-RBS-2014-05330
CR-RBS-2014-05388	CR-RBS-2014-50321		

Procedures

Number	Title	Revision
ADM-0096	Risk Management Program Implementation and On-Line Maintenance Risk Assessment	315
EN-LI-118	Causal Evaluation Process	20
EN-LI-118-08 Rev. 2, Attachment 9.1	Failure Mode Analysis Worksheet - Reactor Trip Due to Unexpected Turbine Anomalies (Bypass and Control Valve Movement)	---
EN-OP-111 Rev. 11, Attachment 9.2	Operational Decision-Making Issue Implementation Action Plan - Intermittent Failure of Turbine Steam Flow Reference Signal	Draft
GOP-0003	Scram Recovery	024
OSP-0053	Emergency and Transient Response Support Procedure	022

Training Documents

Number	Title	Revision
R-STM-0509	Turbine Electro-Hydraulic Control System	13
RPPT-STM-0509-LOR	Electro-Hydraulic Control (EHC)	000

Section 1R22: Surveillance Testing

Condition Report

CR-RBS-2014-05617

Maintenance Documents

WO 52448004 WO 52566334 WO 52570113 WO 52588761

Procedures

Number	Title	Revision
STP-203-6305	HPCS Quarterly Pump and Valve Operability Test	027
STP-203-6501	HPCS Pump and Valve Operability Test	010

Procedures

Number	Title	Revision
STP-205-6301	LPCS Pump and Valve Operability Test	024
STP-309-0206	Division I Diesel Generator 184 Day Operability Test	025

Section 1EP6: Drill Evaluation

Condition Report

CR-RBS-2014-04977

Procedure

Number	Title	Revision
RDRL-EP-1200	Site Drill Scenario	03

Section 4OA1: Performance Indicator Verification

Miscellaneous Document

Number	Title	Date
RBG-47512	Electronic Submittal of Third Quarter 2014 NRC Performance Indicator Information	October 21, 2014

Procedures

Number	Title	Revision
COP-0001	Sampling Via Various Balance of Plant Systems	23
COP-0032	Startup and Operation of the Reactor Sample Panel G33-Z020	10
COP-0044	Configuration Control of Sampling Valves	2
EN-LI-114	Performance Indicator Process	6
STP-000-0001	Daily Operating Logs	078

Section 4OA2: Problem Identification and Resolution

Procedure

Number	Title	Revision
EN-FAP-OP-006	Operator Aggregate Impact Index Performance Indicator	2