UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

February 13, 2013

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

SUBJECT: RIVER BEND STATION – NRC INTEGRATED INSPECTION REPORT 05000458/2012005

Dear Mr. Olson:

On December 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your River Bend Station. The enclosed inspection report documents the inspection results which were discussed on January 16, 2013, with you and other members of your staff.

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

Two NRC-identified findings and two self-revealing findings of very low safety significance (Green) were identified during this inspection.

All of these findings were determined to involve violations of NRC requirements. Further, two licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these violations as non-cited violations consistent with Section 2.3.2 of the Enforcement Policy.

If you contest 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 Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at 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 River Bend Station.

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 NRC's Agencywide Document 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/

David L. Proulx, Acting Branch Chief
Project Branch C
Division of Reactor Projects

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

Enclosure: Inspection Report 05000458/2012005
w/ Attachment: Supplemental Information

cc w/ encl: Electronic Distribution

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SRI:DRP/C	RI:DRP/C	SPE:DRP/C	C:DRS/EB1	C:DRS/EB2	C:DRS/OB
GFLarkin	AJBarrett	RCHagar	TRFarnholtz	GBMiller	VGGaddy
/E-Proulx/	/E-Proulx/	/RA/	/RA/	/RA/	/RA/
2/13/13	2/13/13	2/12/13	1/12/13	1/22/13	2/12/13
C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	ABC:DRP/C		
MSHaire	JFDrake	RLKellar	DLProulx		
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000458
License:	NPF-47
Report:	05000458/2012005
Licensee:	Entergy Operations, Inc.
Facility:	River Bend Station
Location:	5485 U.S. Highway 61 St. Francisville, LA 70775
Dates:	September 29, 2012 – December 31, 2012
Inspectors:	G. Larkin, Senior Resident Inspector, Project Branch C A. Barrett, Resident Inspector, Project Branch C J. Laughlin, Emergency Preparedness Inspector, NSIR
Approved By:	D. Proulx, Branch Chief (Acting), Project Branch C Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000458/2012005; 09/29/2012 – 12/31/2012; RIVER BEND STATION; Integrated Resident and Regional Report; Adverse Weather Protection; Operability Evaluations and Functionality Assessments; Surveillance Testing; Follow-up of Events and Notices of Enforcement Discretion

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspection by a headquarters-based inspector. Four Green non-cited violations of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the failure to maintain temperature control of the safety-related battery rooms. An engineering evaluation to change a procedure to allow gagging open of the control building heating and ventilation system control temperature valves failed to consider the appropriate environmental temperature limits for the rooms. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-07353.

  The failure to maintain temperature control of the safety-related battery rooms was a performance deficiency. This performance deficiency is more-than-minor and is therefore a finding because it is associated with the design control attribute of the mitigating systems cornerstone and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, during a loss of offsite power with low seasonal temperatures, the gagged-open temperature control valve would reduce the battery rooms' temperatures below their environmental design temperature and adversely affect the capacity of the safety-related batteries. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, Section A.1, this finding screened as very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality. The engineering evaluation that changed the proper battery room controls was

performed in 1997. Therefore, the finding did not have a cross-cutting aspect because the failed review is not indicative of current licensee performance (Section 1R01).

- Green. The inspectors identified a non-cited violation of Technical Specification 5.4.1.a for not establishing appropriate lubrication procedures for the standby liquid control pump motor bearings. Specifically, the station incorrectly used the Electrical Power Research Institute (EPRI) guidance for maintenance procedure by adding twice the amount of grease required. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-05573.

  The failure to establish appropriate lubrication procedures is a performance deficiency. This performance deficiency is more-than-minor and is therefore a finding because if left uncorrected, it has the potential to lead to a more significant safety concern. Specifically, if the work instructions were not corrected, future work activities that grease the motor bearings in accordance with those work orders would over-grease the bearings, which may result in common-cause failures of standby motors. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, Section A.1, this finding screened as very low safety significance (Green). Specifically, the finding is a deficiency that affected the qualification of the standby liquid control pump motors; however, the systems maintained their operability. Because the most significant causal factor of the performance deficiency was station personnel and management failing to fully evaluate the previously identified inadequate lubrication of motors, this finding has a problem identification and resolution cross-cutting aspect associated with the corrective action program component [P.1(c)] (Section 1R15).

- Green. The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a due to a failure to follow work order instructions. Specifically, station personnel failed to follow the requirements of Procedure GMP-0042, "Lifted Leads and Jumpers," Revision 13 when removing and reinstalling a time-delay relay for a standby service water cooling fan. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-06325.

  The failure to follow work order instructions is a performance deficiency. This performance deficiency is more-than-minor because it is associated with the equipment reliability attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to ensure the correct wiring to the standby service water fan time-delay relay resulted in the inability of the fan to be started locally, which is required for remote shutdown of the plant. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609,

Appendix A, “The Significance Determination Process for Findings At Power,” Exhibit 2, Section A, question 3, this finding required a detailed risk evaluation because the finding represented an actual loss of function of at least a single train for greater than the technical specification allowed outage time. The risk of the condition was evaluated by a senior reactor analyst. The sequence that would result in a risk increase is control room abandonment with concurrent maintenance being performed on the alternate bank of 5 fans. This would leave only 4 functional fans in one division of standby service water, whereas 5 fans are needed per design to meet the safety function.

The frequency of control room abandonment is approximately 5E-5/yr and the frequency of maintenance performed on one bank of standby service water fans is approximately 1E-2. Therefore, the frequency of a scenario where the failure of one fan to operate from the alternate shutdown panel would cause a measurable effect on risk is approximately 5E-7/yr. The other division of standby service water fans was unaffected by this condition. Accordingly, the significance of the performance deficiency was determined to be very low (Green). This finding has a human performance cross-cutting aspect associated with the work practices component in that the electricians failed to use adequate human error prevention techniques [H.4(a)] Section 4OA3).

Cornerstone: Barrier Integrity

- Green. The inspectors reviewed a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to promptly correct a condition adverse to quality. Specifically, station personnel failed to implement repairs to the mechanism-operated contact linkages for safety-related breakers, ultimately resulting in the failure of standby gas treatment filtration train 1B to start on demand. This issue was entered into the licensee’s corrective action program as Condition Report CR-RBS-2012-005894.

  The failure to correct a condition adverse to quality is a performance deficiency. This performance deficiency is more-than-minor because it is associated with the systems, structures, and components and barrier performance attributes of the barrier integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the standby gas treatment exhaust filter train failed to start during a surveillance test because of a nonconforming mechanical linkage in the feeder breaker resulting in unavailability for standby gas train 1B. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, “Initial Characterization of Findings,” and NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At Power,” Exhibit 3, Section C, question 1, the finding screened as very low safety significance (Green), because the finding represented only a degradation of the radiological barrier function provided by

the standby gas treatment system. No cross-cutting aspect was assigned to this finding because the NRC concluded the finding did not reflect current licensee performance (Section 1R22).

B. Licensee-Identified Violations

Violations of very low safety significance that were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and associated corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

River Bend Station began the inspection period at 100 percent reactor power. On October 19, 2012, operators reduced reactor power to 85 percent for a control rod sequence exchange and returned to 100 percent power on October 21, 2012. On November 30, 2012, operators reduced reactor power to 62 percent to perform a control rod sequence exchange and returned to 100 percent power on December 1, 2012. On December 19, 2012, the plant experienced an unplanned recirculation pump trip, reducing power to 65 percent, due to a failed optical isolator card. The plant repaired the card, reduced power to 28 percent to place the pump back in service, and returned to 100 percent power on December 20, 2012. The plant remained at 100 percent reactor power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of the adverse weather procedures for seasonal extreme low temperatures. The inspectors verified that weather-related equipment deficiencies identified during the previous year were corrected prior to the onset of seasonal extremes and evaluated the implementation of the adverse weather preparation procedures and compensatory measures for the affected conditions before the onset of, and during, the adverse weather conditions.

During the inspection, the inspectors focused on plant-specific design features and the procedures used by plant personnel to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Safety Analysis Report and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that plant personnel were identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- Control building heating, ventilation, and air conditioning system
- Control building chilled water system

These activities constitute completion of one readiness for seasonal adverse weather sample as defined in Inspection Procedure 71111.01-05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the failure to maintain temperature control of the safety-related battery rooms. An engineering evaluation to change a procedure to allow gagging open of the control building heating and ventilation system control temperature valves failed to consider the appropriate environmental temperature limits for the rooms.

Description. The control building air conditioning subsystem is designed to maintain ambient conditions in the control building within environmental design limits. To maintain the design limits, temperature control valves, HVK-TV17A and B, modulate chilled water flow through the control building air conditioning units, HVC-ACU2A and B. Engineering evaluation ER-1996-0670, "Evaluation for Deleting HVK-TV17A/B from Control Building HVAC," determined that these temperature control valves could be gagged full open and maintain the environmental design room temperature within limits in the areas served by air conditioning units HVC-ACU2A and B. Engineering evaluation ER-1996-0670 calculated the final air temperature in these areas as 56.1°F. Using engineering evaluation ER-1996-0670 as their basis, the licensee changed their System Operating Procedure SOP-0066, "Control Building HVAC Chilled Water System (Sys # 410)," Revision 309, to allow operators to physically gag open valves HVK-TV17A or B with outside ambient air temperature greater than 25°F.

On May 7, 2012, during a post-maintenance test on air conditioning units HVC-ACU2B, valve HVK-TV17B failed to operate correctly. The valve was tagged out of service and gagged in the open position to maintain Division 2 control building heating, ventilation, and chilled water operable per Procedure SOP-0066. The inspectors reviewed the station's operability basis and found that engineering evaluation ER-1996-0670 misstated the minimum environmental design temperature for the safety-related battery rooms as 40°F. The Updated Safety Analysis Report states the minimum temperature is 60°F. In addition, Technical Specification 3.8.6, "Battery Cell Parameters," requires safety-related batteries be declared inoperable if the battery temperature is less than or equal to 60°F to ensure availability of the required dc power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated design basis accident. Therefore, the inspectors determined that the limitations prescribed in engineering evaluation ER-1996-0670 and instructions in Procedure SOP-0066 would not maintain the minimum required battery room temperatures during all operating conditions.

The licensee documented this operational challenge in Condition Report CR-RBS-2012-07353. The licensee evaluated the impact of the temperature reduction in the battery room using industry guidance IEEE-485, "Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications. According to the industry guidance IEEE-485 methodology, at 60°F the Division 1, 2, and 3 batteries would have a capacity of 102.41 percent, 101.82 percent, and 106.61 percent, respectively. Reducing the battery room temperature from 60°F to 55°F resulted in a loss of 4 percent capacity. This capacity reduction is within the margin of the excess capacity of the Division 3 battery and no further analysis was required, but approximately 2 percent below the

design 100 percent capacity for the Division 1 and 2 batteries. The batteries, however, were rated to supply all required loads at a capacity of 80 percent. In 2008, the last recorded performance discharge test for the Division 1 and 2 batteries was at 109 percent and 105 percent, respectively. Given the margin between the current battery capacity and the minimum design capacity of 80 percent, the inspectors assessed that it that the battery was capable of performing its required safety function. The licensee classified the control building heating and ventilation system operable with compensatory measures. The compensatory measure required a review of the next Division 1 and 2 battery performance discharge test to ensure that the rate of capacity loss is as expected.

Analysis. The failure to maintain temperature control of the safety-related battery rooms was a performance deficiency. The performance deficiency is more-than-minor and is therefore a finding because it is associated with the design control attribute of the mitigating systems cornerstone and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, during a loss of offsite power with low seasonal temperatures, the gagged-open temperature control valve would reduce the battery rooms' temperatures below their environmental design temperature and adversely affect the capacity of the safety-related batteries. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, Section A.1, this finding screened as very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality. The engineering evaluation that changed the proper battery room controls was performed in 1997. Therefore, the finding did not have a cross-cutting aspect because the failed review is not indicative of current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that the design bases are correctly translated into procedures. Contrary to the above, measures established by the licensee did not assure that the design bases, were correctly translated into procedures. Specifically, from September 2, 1993, until December 7, 2012, measures established by the licensee in Procedure SOP-0066, allowed the temperature control valves to be gagged open and thereby did not assure that the environmental design temperature limits for the safety-related batteries would be maintained. This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-07353 to address recurrence. (NCV 05000458/2012005-01, Failure to Maintain Design Control of the Control Building Chilled Water System.)

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- Fire water system following system maintenance
- Division 1 control building heating, ventilation, and air conditioning system following system maintenance
- Division 2 emergency diesel generator during Division 1 outage
- Division 1 emergency diesel generator following system maintenance in support of a special inspection

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Safety Analysis Report, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected 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 obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On October 11, 2012, the inspectors performed a complete system alignment inspection of the residual heat removal system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one complete system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- October 24, 2012, standby service water pump house and cooling tower
- October 25, 2012, reactor building, fire area RC-3/Z-6, hydrogen recombiner area
- October 25, 2012, auxiliary building, fire area AB-15/Z-3, motor control center area east
- October 25, 2012, auxiliary building, fire area AB-1/Z-2, component cooling primary heat exchanger room

- October 25, 2012, reactor building, fire area RC-4/Z-6, hydrogen recombiner area

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the Updated Safety Analysis Report, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- November 27, 2012, residual heat removal A, B, and C rooms

These activities constitute completion of one flood protection measures inspection sample as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the component cooling secondary and component cooling primary heat exchangers. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in EPRI Report NP 7552, "Heat Exchanger Performance Monitoring Guidelines"; the licensee properly utilized biofouling controls; the licensee's heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two 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 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On October 30, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during requalification testing. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations and the quality of the training provided
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques

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 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On December 10, 2012, 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 risk due to planned surveillances following an extended diesel outage and the potential for severe weather in the area (tornado watch). In addition, the inspectors observed a medical evacuation drill.

In addition, the inspectors assessed the operators' adherence to plant procedures, including EN-OP-115, "Conduct of Operations," Revision 013 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.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- 125 VDC Breakers

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)

- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

This inspection represents a review of Operating Experience Smart Sample OpESS FY 2010-01, "Recent Inspection Experience for Components Installed Beyond Vendor Recommended Service Life."

These activities constitute completion of one quarterly maintenance effectiveness sample as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- Fancy Point switchyard work – 500 kV to 230 kV oil-filled circuit breaker relay calibration and testing, November 7, 2012

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 licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4)

and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one maintenance risk assessments and emergent work control inspection sample as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- CR-RBS-2012-03252, shutdown cooling outboard containment isolation valve, E12-MOVF008, packing torque too high, reviewed on November 1, 2012
- CR-RBS-2012-01858, reactor core isolation cooling lube oil cooler pressure relief valve lifted, reviewed on November 5, 2012
- CR-RBS-2012-03226, metal particles in Division 3 emergency diesel generator fuel oil injectors, reviewed on November 6, 2012
- CR-RBS-2012-05365, chilled water compression tank relief valve failed, reviewed on November 6, 2012
- CR-RBS-2012-06325, standby service water cooling tower fan, SWP-FN1L, failed to start from local control, reviewed on December 3, 2012
- CR-RBS-2012-04674, control building ventilation damper, HVC-AOD43B, leaking, reviewed on October 9, 2012
- CR-RBS-2012-05468, standby liquid control motor greasing, reviewed on December 4, 2012

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated

the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify 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 the Updated Safety Analysis Report to the licensee'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. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of seven operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of Technical Specification 5.4.1.a for not establishing appropriate lubrication procedures for the standby liquid control pump motor bearings. Specifically, the station incorrectly used the Electrical Power Research Institute (EPRI) guidance by adding twice the amount of grease required.

Description. On August 23, 2012, the inspectors identified excess grease on both divisions of the standby liquid control pump motor bearings. Specifically, the inspectors identified grease on the motor ventilation screens below the pump motor bearings and on the motor coil cooling fins. Plant personnel documented the concern in Condition Report CR-RBS-2012-05468. Further review by station engineering determined that excess grease had been applied due to improper use of the basis document for the preventative maintenance work order used to lubricate the motor bearings. Electrical Power Research Institute (EPRI) lubrication manual NP-7502, "Electric Motor and Predictive Maintenance Guide," provides the basis for developing work instructions to properly maintain safety-related electric motors at River Bend Station. EPRI NP-7502, Table B-1, note states that one half of the recommended grease should be added for standby motors. On September 16, 1999, using the EPRI guidance document, the station updated the preventative maintenance procedures for the standby liquid control motors to change the frequency of greasing from a 104 week interval to a 234 week interval. In addition, the preventative maintenance procedures changed the amount of grease applied to the motor bearings from 0.3 ounces to 1.0 ounce. According to the EPRI guidance document, the amount of grease added to the bearings should have been 0.5 ounces.

NRC Information Notice No. 88-12, "Overgreasing of Electric Motor Bearings," identified several electric motor overgreasing events that led to the failure of the motors. The information notice discussed that the excess grease will leak out from the bearing seal and be deposited on the stator and rotor windings, creating a thermal barrier between the windings and their cooling air, leading to an increase in motor temperature. For motors designed to use outside air to cool the windings, the temperature is increased

still more by the buildup of dirt, dust, and other foreign materials that adhere to the grease. The information notice concluded that for every 10°F rise in motor temperature, the insulation life of the windings is reduced by half, which can ultimately lead to deterioration of the winding insulation, causing the motor to "short out."

On November 16, 2011, the inspectors documented a non-cited violation for inadequate maintenance procedures for lubrication of standby motors in Inspection Report 05000458/2011005. The inspection report documented the misuse of the EPRI guidance document for standby motors at the station. The station developed corrective actions for the violation in Condition Report CR-RBS-2011-08423. The corrective actions implemented by the station focused on determining if grease relief fittings had been installed on station electric motor bearings to protect the bearings from over-pressurization. The station failed to implement corrective actions to ensure that standby motors would be greased per the requirements of EPRI NP-7502, Table B-1.

On September 29, 2012, the station completed a review of all of the preventive maintenance work orders for standby motors to ensure that the work orders stated the correct amount of grease to add to the motor bearings. The station did not identify any other motors that could be impacted by the error. In addition, station personnel revised the preventive maintenance work orders for the standby liquid control motors to lubricate the motors with the appropriate amount of grease.

Analysis. The failure to establish work orders that have proper lubrication procedures for the standby liquid control motors was a performance deficiency. This performance deficiency is more-than-minor and is therefore a finding because if left uncorrected, it has the potential to lead to a more significant safety concern. Specifically, if the work instructions were not corrected, future work activities that grease the motor bearings in accordance with those work orders would over-grease the bearings, which may result in common-cause failures of standby motors. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, “Initial Characterization of Findings,” and NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At Power,” Exhibit 2, Section A.1, this finding screened as very low safety significance (Green). Specifically, the finding is a deficiency that affected the qualification of the standby liquid control pump motors; however, the systems maintained their operability. The inspectors determined that the cause of the performance deficiency was due to station personnel failing to fully evaluate the previously identified inadequate lubrication of motors documented in River Bend Station Integrated Inspection Report 05000458/2011005. Because the most significant causal factor of the performance deficiency was station personnel and management failing to fully evaluate the previously identified inadequate lubrication of motors, this finding has a problem identification and resolution cross-cutting aspect associated with the corrective action program component [P.1(c)].

Enforcement. Technical Specifications 5.4.1.a requires that written procedures shall be established implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, Section 9, requires, in part, that maintenance that can affect the performance of safety-related equipment should be

properly preplanned and performed in accordance with written procedures appropriate to the circumstances. Contrary to the above, from September 16, 1999, to September 29, 2012, the licensee performed maintenance that could affect the performance of safety-related equipment with written instructions that were not appropriate to the circumstances. Specifically, the work orders used by the licensee did not include important guidance for lubricating the standby liquid control pump motor bearings. This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-05573 to address recurrence. (NCV 05000458/2012005-02, Inadequate Procedures for Lubrication of the Standby Liquid Control Pump Motor Bearings)

1R18 Plant Modifications (71111.18)

Permanent Modifications

a. Inspection Scope

The inspectors reviewed key affected parameters associated with energy needs, materials, replacement components, timing, control signals, equipment protection from hazards, operations, flow paths, pressure boundary, ventilation boundary, process medium properties, licensing basis, and failure modes for the permanent modifications listed below:

- ER-RB-1996-0670, Revision 0, "Evaluation for Deleting HVK-TV17A/B from Control Building HVAC"
- ER-RB-1997-0020, Revision 0, "FWL-RV18C Setting"
- EC-37897, "Evaluation to Raise Trip Setting of EHS-MCC2A-3A and EHS-MCC2K-6B for Hydrogen Igniters

The inspectors verified that modification preparation, staging, and implementation did not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; postmodification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur; systems, structures and components' performance characteristics still meet the design basis; the modification design assumptions were appropriate; the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three samples for permanent plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- WO-52401235, “EHS-MCC16B 5D / SWP-MOV40B Unitized Starter Current Injection,” reviewed on October 23, 2012
- WO-52425501, “Mechanical Maintenance Perform Operability Test STP-000-6617: (DIV 2) HVK-V97,” reviewed on October 23, 2012
- WO-00315321, “RCIC Optical Isolator Failure,” reviewed on November 8, 2012
- WO-00313939, “HVK-TV17B Temperature Control Valve Failed,” reviewed on December 17, 2012

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the Updated Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four post-maintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Updated Safety Analysis Report, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- STP-204-6301, Rev 25, "Div I LPCI (RHR) Pump and Valve Operability Test," performed on July 16, 2012 (inservice test)
- STP-203-6301, Rev 26, "HPCS Pump and Valve Operability Test," performed on September 17, 2012 (inservice test)
- CMP-1026, Revision 18, "MCC Circuit Breakers, Starters, and Thermal Overloads," performed on October 2, 2012 (routine)
- STP-256-6305, Revision 10, "Division I Standby Service Water Quarterly Valve Operability Test," performed on October 26, 2012 (routine)
- STP-257-0202, Revision 14, "Standby Gas Treatment System Filter Train B Monthly Operability Test," performed on December 12, 2012 (routine)
- STP-309-0612, Revision 33, "Division II Diesel Generator 24 Hour Run," performed on December 20, 2012 (routine)
- STP-000-0001, Revision 72, Daily Operating Logs," performed on December 27, 2012 (reactor coolant system leakage detection)

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of seven surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

Introduction. The inspectors reviewed a Green self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to promptly correct a condition adverse to quality. Specifically, station personnel failed to implement repairs to the mechanism-operated contact linkages for safety-related breakers, ultimately resulting in the failure of standby gas treatment filtration train 1B to start on demand.

Description. On May 18, 2012, the standby gas treatment filtration train 1B failed to start during surveillance testing. The subsequent investigation found that the mechanism-operated contact linkage on the 480V MasterPact breaker power supply to the fan had disengaged when a screw backed out from the mechanical linkage insert. The screw, its lock-washer, and a large flat washer were found in the bottom of the breaker cubicle. The mechanism-operated contact linkage connects to the breaker linkage, such that when the breaker changes states, the auxiliary contacts change state. The auxiliary contacts provide permissives to a variety of functions associated with the circuit, all of which are rendered inoperative if the linkage is not functioning properly.

Station personnel found that the screw did not have thread lock applied, and that the flat washer found in the breaker cubicle was not part of the design of the breaker linkage.

In 2007, the station began replacing obsolete General Electric AKR breakers with MasterPact breakers. On April 5, 2007, early in the modification process, the station installed the MasterPact breaker in standby gas treatment filter train 1B. On April 26, 2007, during bench testing of two similar MasterPact circuit breakers, technicians identified a loose screw at the same location on both breakers mechanism-operated contact linkage insert. The vendor was notified of the nonconformances, and on August 30, 2007, the vendor supplied reassembly instructions for the mechanism-operated contact linkage and the cause evaluation for the loose screws. The cause evaluation identified that excessive grease had been used on the linkage mechanism, reducing the friction on the screw, allowing it to loosen. The reassembly instructions directed the station to apply a thread lock to the linkage screw to prevent the screws from disengaging. The extent of condition included sixteen safety-related breakers that the station failed to apply the vendor instructions, leaving the station vulnerable to similar breaker failures. In addition, the station determined that the nonconforming flat washer in the breaker linkages could have prevented adequate thread engagement for the screw. The manufacturer had incorrectly used the flat washers in the linkage.

Corrective actions performed by the station included inspecting the safety-related MasterPact breakers installed prior to December 31, 2007, for the presence of flat washers and to ensure that the lock washers on the linkages were adequately tightened. The station also revised the generic breaker preventative maintenance work instructions and the bench-testing work instructions to verify that the screws have thread lock applied.

Analysis. The failure to promptly correct the nonconforming linkages in the standby gas treatment system breaker was a performance deficiency. The performance deficiency is more-than-minor because it is associated with the systems, structures, and components and barrier performance attributes of the barrier integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the standby gas treatment exhaust filter train failed to start during a surveillance test because of a nonconforming mechanical linkage in the feeder breaker resulting in unavailability for standby gas train 1B. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, “Initial Characterization of Findings,” and NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At Power,” Exhibit 3, Section C, question 1, the finding screened as very low safety significance (Green), because the finding represented only a degradation of the radiological barrier function provided by the standby gas treatment system. No cross-cutting aspect was assigned to this finding because the NRC concluded the finding did not reflect current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI, requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly

identified and corrected. Contrary to this, from April 5, 2007, to May 18, 2012, measures established by the licensee did not assure that conditions adverse to quality were promptly identified and corrected. Specifically, during the subject period, those measures did not identify and correct nonconforming mechanically-operated contact linkages in safety-related breakers, resulting in a loss of standby gas treatment filter train 1B. This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-005894 to address recurrence. (NCV 05000458/2012010-03, Failure to Implement Effective Corrective Actions for Defects in MasterPact Breakers.)

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures and the Emergency Plan located under ADAMS accession number ML 12262A358 as listed in the attachment.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on October 30, 2012, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the postevolution critique for the scenario. The focus of the

inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

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 Physical Security

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the third quarter 2012 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Safety System Functional Failures (MS05)

a. Inspection Scope

The inspectors sampled licensee submittals for the safety system functional failures performance indicator for the period from the second quarter 2011 through the third quarter 2012. 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, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73." The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports, and

NRC integrated inspection reports for the period of April 2011 through September 2012 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one safety system functional failures sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - Emergency ac Power System (MS06)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - emergency ac power system performance indicator for the period from the second quarter 2011 through the third quarter 2012. 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 reviewed the licensee's operator narrative logs, mitigating systems performance index derivation reports, issue reports, event reports, and NRC integrated inspection reports for the period of April 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - emergency ac power system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Mitigating Systems Performance Index - High Pressure Injection Systems (MS07)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - high pressure injection systems performance indicator for the period from the second quarter 2011 through the third quarter 2012. 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 reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of April 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - high pressure injection systems sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Mitigating Systems Performance Index - Heat Removal System (MS08)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - heat removal system performance indicator for the period from the third quarter 2011 through the third quarter 2012. 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 reviewed the licensee's operator narrative logs, issue reports, event reports, mitigating systems performance index derivation reports, and NRC integrated inspection reports for the period of July 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - heat removal system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Mitigating Systems Performance Index - Residual Heat Removal System (MS09)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - residual heat removal system performance indicator for the period from the third quarter 2011 through the third quarter 2012. 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 reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of July 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - residual heat removal system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.7 Mitigating Systems Performance Index - Cooling Water Systems (MS10)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - cooling water systems performance indicator for the period from the third quarter 2011 through the third quarter 2012. 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 reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of July 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator

and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - cooling water systems sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.8 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for the period from the fourth quarter 2011 through the third quarter 2012. 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 reviewed the licensee's reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports, and NRC integrated inspection reports for the period of October 2011 through September 2012 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one reactor coolant system specific activity sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.9 Reactor Coolant System Leakage (BI02)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system leakage performance indicator for the period from the fourth quarter 2011 through the third quarter 2012. 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 reviewed the licensee's operator logs, reactor coolant system leakage tracking data, issue reports, event reports, and NRC integrated inspection reports for the period of October 2011 through September 2012 to validate the accuracy of the

submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one reactor coolant system leakage sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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 licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on equipment reliability issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 7-month period of May 2012 through December 2012 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 licensee's trending reports were reviewed for adequacy.

These activities constitute completion of one single semi-annual trend inspection sample as defined in Inspection Procedure 71152-05.

b. Findings and Observations

River Bend Station Integrated Inspection Report 05000458/2012003 documented multiple safety-related and high-risk equipment failures. In that report, the inspectors also noted deficiencies in implementing the stations maintenance rule program as discovered through NRC maintenance rule inspection findings and a self-assessment performed by an external engineering firm. For this semi-annual problem identification and resolution review, the inspectors again observed a continuing adverse trend in equipment failures in both safety-related and high-risk systems. In addition, station quality assurance has found that the maintenance rule program is still vulnerable to the conditions identified in the self-assessment report. Station quality assurance found that seven of nineteen corrective actions issued to resolve concerns in the maintenance rule self-assessment were not effectively addressed and four concerns from the report were

not documented in the corrective action program. In addition, the station's performance indicator for critical component failures remains red. To evaluate the continuing adverse trend in equipment reliability, the inspectors reviewed the following failures and degraded conditions during the third and fourth quarters of 2012:

- Safety relief valve nozzle set screw failures, CR-RBS-2012-03843
- Division I emergency diesel generator jacket water pipe break, CR-RBS-2012-07402
- Standby service water check valve failure, CR-RBS-2012-07219
- Control building chiller pressure switch failure, CR-RBS-2012-07142
- Control building temperature control valve failure, CR-RBS-2012-07027
- RCIC minimum flow valve cycling, CR-RBS-2012-06788
- APRM F trip due to LPRM failure, CR-RBS-2012-06795 downgrade
- Missing bucket mounting screws in MSIV breaker cabinet, CR-RBS-2012-06391
- Multiple 480V breaker failures, CR-RBS-2012-04886
- Service water fan 1G failure due to breaker component failure, CR-RBS-2012-05111
- Service water fan 1L failure due to wiring error, CR-RBS-2012-06325
- Electric motor driven fire pump failed to start, CR-RBS-2012-05011
- Lower containment airlock failed to pass leak test, CR-RBS-2012-05314
- Control building chiller service water supply valve failure, CR-RBS-2012-05252
- Standby gas treatment system fan breaker failure, CR-RBS-2012-04208
- Low pressure coolant injection check valve limit switch arm failure, CR-RBS-2012-03825
- RCIC steam line differential pressure transmitter fluctuating, CR-RBS-2012-04463

In addition, the inspectors identified the following equipment failure trends for the nuclear instrumentation system (includes both APRMs and IRMs):

- CR-RBS-2012-04397
- CR-RBS-2012-04980

- CR-RBS-2012-04777
- CR-RBS-2012-05646
- CR-RBS-2012-04423
- CR-RBS-2012-03734
- CR-RBS-2012-03733

and for the digital radiation monitor system, including failures of the main plant exhaust radiation monitor and radiation monitors used in the station's EOPs:

- CR-RBS-2012-06030
- CR-RBS-2012-03957
- CR-RBS-2012-03834
- CR-RBS-2012-04105
- CR-RBS-2012-03715

Separate from the high and low critical failure reviews, the inspectors also identified an increasing trend in ground fault alarms on safety-related dc busses:

- CR-RBS-2012-03880
- CR-RBS-2012-06397
- CR-RBS-2012-06631
- CR-RBS-2012-06901

The inspectors expanded the sample to review the past two years of corrective action program data and identified 11 condition reports that document ground fault alarms on safety-related dc busses. No adverse trend has been identified by station personnel, and all condition reports have been closed to 'D' level, which does not require issue disposition.

The inspectors also found that Procedure EN-LI-102, "Corrective Action Process," Revision 20, recommends apparent cause evaluations for high critical and low critical equipment failures, but the condition review group has the flexibility to grade lower or downgrade condition reports when necessary. The inspectors found that of the high critical and low critical equipment failures that were reviewed, 11 of 18 did not have apparent cause evaluations performed for the failures. In addition, several condition reports graded as 'C' level included dispositions that detailed actions taken to resolve the condition; however, the dispositions did not identify a cause for the condition. Also, during the review, the inspectors noted that the coding for several condition reports did not have an equipment classification code or did not have the correct code listed for the component failure.

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting:

CR-RBS-2012-03907: Startup Feedwater Regulator Valve Closed While in Manual Mode

On June 7, 2012, the startup feedwater regulator valve, C33-LVF002, went closed with no operator action due to the manual control unit on the flow controller failing. Because the reactor was at 0 percent power, the failure did not result in an unexpected reactor water level change or reactor scram. The inspectors reviewed the condition report associated with the failure and interviewed plant personnel, and found that the controller was original equipment that had not been replaced since plant construction, although the preventive maintenance frequency had been set at a twenty-year life. The controller had been originally scheduled to be replaced in 2005; however, deferrals of the replacement preventive maintenance continued until the unit failed. In addition, previous condition reports that detailed components reaching their end of life (CR-RBS-2010-01650 and CR-RBS-2010-02711) failed to address the component, with an inadequate justification that replacement parts from the warehouse were as old as the components installed in the plant.

CR-RBS-2012-05965: Quality Assurance Identified Potential Fatigue Rule Violations

On September 19, 2012, station quality assurance personnel identified that corrective actions taken to address previously identified program deficiencies with the documentation and control of maintenance personnel working hours in 2010 and 2011 have not been effective to prevent Procedure EN-OM-123, "Fatigue Management Program," Revision 4, procedural non-conformances. The quality assurance personnel found that during forced outage 12-02, maintenance management failed to enter work hours for supplemental maintenance personnel into the fatigue management database. The inspectors reviewed the condition as described and interviewed maintenance management to understand the difficulties with managing the database. The inspectors also reviewed maintenance department records to ensure that the station is in compliance with the fatigue management program. Although maintenance management failed to input the work hour data in to the database, the inspectors did not identify any violations of work hour limits. In addition, individuals that did exceed authorized work hour limits had approved overtime waivers as required by Procedure EN-OM-123.

These activities constitute completion of two in-depth problem identification and resolution samples as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

.5 In-depth Review of Operator Workarounds

a. Inspection Scope

An operator workaround is defined as a degraded or nonconforming condition that complicates the operation of plant equipment and is compensated for by operator action.

During the week of December 3, 2012, the inspectors reviewed the cumulative effect of the existing operator workarounds and contingency plans. The inspectors concentrated on the effect the workarounds have on: (1) the reliability, availability, and potential for misoperation of any mitigating system; (2) whether they could increase the frequency of an initiating event; and (3) their effect on the operation of multiple mitigating systems. In addition, the inspectors reviewed the cumulative effects the operator workarounds have on the ability of the operators to respond in a correct and timely manner to plant transients and accidents.

b. Findings

No findings were identified.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report 05000458/2012-001-00 and -01: Operations Prohibited by Technical Specifications Due to Inoperability of Division 3 Diesel Generator

On May 8, 2012, plant engineers determined that the Division 3 diesel generator lubricating oil was contaminated with fuel oil to such an extent that the diesel generator was not able to run continuously for its 30-day mission time. Investigation of this event determined that the fuel oil leak began at a damaged fuel oil jumper-to-fuel injector filter cap connection on cylinder number 20 during a scheduled maintenance outage in October 2011. There was no guidance in the vendor manual on how to install the fuel line jumper (i.e., which side to install first) only the specified torque value. The station replaced the jumper and performed a satisfactory leak test. The enforcement aspects of this finding are discussed in Section 4OA7.

.2 (Closed) Licensee Event Report 05000458/2012-004-00: Operations Prohibited by Technical Specifications Due to Wiring Error in Safety-Related Circuit Breaker

On October 6, 2012, while the plant was operating at 100 percent power, it was discovered that one of the safety-related fans in the standby service water cooling tower would not start from the remote shutdown panel. The initial investigation determined that the failure was due to incorrect maintenance that had been performed on May 3, 2011, when a relay in the fan motor breaker was miswired during re-installation after bench testing. This condition caused the fan to have been inoperable since that time with respect to the function of the Remote Shutdown System, as governed by Technical Specification 3.3.3.2.

b. Findings

Introduction. The inspectors reviewed a Green self-revealing, non-cited violation of Technical Specification 5.4.1.a due to a failure to follow work order instructions. Specifically, station personnel failed to follow the requirements of Procedure GMP-0042, “Lifted Leads and Jumpers,” Revision 13, when removing and reinstalling a time-delay relay for a standby service water cooling fan.

Description. On October 6, 2012, during post-maintenance testing following a relay replacement, standby service water fan 1L failed to start using the local control switch. Operations personnel successfully started the fan from the control room; however, subsequent investigation found that a previous wiring error following a bench calibration of a time-delay relay prevented the fan from starting. The fan is required to start from the local switch to allow for remote shutdown of the plant. The licensee's investigation found that on May 3, 2011, electricians had improperly lifted and restored leads when removing and restoring the time-delay relay to the fan breaker circuit. The electricians documented two lifted leads on Procedure GMP-0042, Attachment 1, "Lifted Lead and Jumper Log Sheet," to a specific terminal point where the circuit, by design, only has a single lead. Procedure GMP-0042 requires an independent verification by the second electrician to verify the correct leads are landed. Both electricians did not follow the procedure to restore the time-delay relay to its proper terminal. In addition, the work order instructions did not contain a post-maintenance test after re-installation of the relay. The licensee entered this issue into their corrective action program for resolution as Condition Report CR-RBS-2012-06325. The immediate corrective action restored the time-delay relay wiring to be in accordance with design. The station's post-maintenance testing procedure had already been revised to require functional tests of equipment following relay replacements due to industry operating experience, but had not been revised prior to the error on May 3, 2011.

Analysis. The failure to follow the procedure for lifting leads on safety-related equipment was a performance deficiency. The performance deficiency is more-than-minor because it is associated with the equipment reliability attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to ensure the correct wiring to the standby service water fan time-delay relay resulted in the inability of the fan to be started locally, which is required for remote shutdown of the plant. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, Section A, question 3, this finding required a detailed risk evaluation because the finding represented an actual loss of function of at least a single train for greater than the technical specification allowed outage time. The risk of the condition was evaluated by a senior reactor analyst. The sequence that would result in a risk increase is a control room abandonment with concurrent maintenance being performed on the alternate bank of 5 fans. This would leave only 4 functional fans in one division of standby service water, whereas 5 fans are needed per design to meet the safety function.

The frequency of control room abandonment is approximately 5E-5/yr and the frequency of maintenance performed on one bank of standby service water fans is approximately 1E-2. Therefore, the frequency of a scenario where the failure of one fan to operate from the alternate shutdown panel would cause a measurable effect on risk is approximately 5E-7/yr. The other division of standby service water fans was unaffected by this condition. Accordingly, the safety significance of the performance deficiency was determined to be very low (Green).

The inspectors determined that the cause of the performance deficiency was due to inadequate self-checking and peer-checking by the performer and verifier during the lifting of leads. Therefore, this finding has a human performance cross-cutting aspect associated with the work practices component in that the electricians failed to use adequate human error prevention techniques [H.4(a)].

Enforcement. Technical Specification 5.4.1.a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 9 of Regulatory Guide 1.33, Revision 2, Appendix A requires that maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. Contrary to this, on May 3, 2011, maintenance that can affect the performance of safety-related equipment was not performed in accordance with written procedures. Specifically, station electricians failed to follow the requirements of Procedure GMP-0042, "Lifted Leads and Jumpers," Revision 13, when removing and reinstalling a time delay relay for the safety-related standby service water cooling fan. This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-06325 to address recurrence. (NCV 05000458/2012005-04, Failure to Follow Procedure for Lifting Leads Results in Inoperability of Standby Service Water Fan.)

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 16, 2013, the inspectors presented the integrated inspection results to Mr. Eric 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.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as non-cited violations.

.1 Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings." Criterion V states, in part, that activities affecting quality shall be accomplished in accordance with procedures. Contrary to the above, from October 11, 2011, to May 8, 2012, activities affecting quality were not accomplished in accordance with station procedures. Specifically, station personnel failed to follow Procedure SEP-LUB-RBS-001, "River Bend Station Lubrication Predictive Analysis Program," Revision 3, which requires recording all oil analysis test results into the lubricating oil analysis database. The finding is considered to be of very low safety significance

(Green), because it was not a design or qualification deficiency; did not represent either a loss of system safety function, an actual loss of safety function of a single train, or an actual loss of safety function; and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-03185.

.2 Title 10 CFR Part 50, Appendix B, Criterion XI, "Test Control" states, in part, that a test program shall be established to assure that all testing required to demonstrate that systems, structures, and components will perform satisfactorily in service. Contrary to the above, prior to June 13, 2012, the licensee did not establish a test program that demonstrated that the control building air accumulations contained sufficient back up air to maintain the safety-related control building fresh air system dampers operable for its 24 hours post design basis accident mission time without operator action. The finding is considered to be of very low safety significance (Green), because it was not a design or qualification deficiency; did not represent either a loss of system safety function, an actual loss of safety function of a single train, or an actual loss of safety function; and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The issue has been entered into the licensee's corrective action program as Condition Report CR-RBS-2012-04674.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Boulanger, Manager, Maintenance
D. Burnett, Manager, Emergency Preparedness
G. Bush, Manager, Material, Procurement, and Contracts
M. Chase, Manager, Training
J. Clark, Manager, Licensing
C. Colman, Manager, Engineering Programs & Components
F. Corley, Manager, Design Engineering
R. Creel, Superintendent, Plant Security
T. Evans, Manager, Operations
M. Feltner, Manager, Planning and Scheduling, Outages
C. Forpahl, Manager, System Engineering
A. Fredieu, Manager, Outage
R. Gadbois, General Manager, Plant Operations
T. Gates, Assistant Operations Manager - Shift
G. Hackett, Superintendent, Radiation Protection
K. Hallaran, Superintendent, Chemistry
G. Krause, Assistant Operations Manager – Training
W. Mashburn, Director, Engineering
E. Olson, Site Vice President
J. Roberts, Director, Nuclear Safety Assurance
T. Santy, Manager, Security
T. Shenk, Assistant Operations Manager – Support
M. Spustack, Supervisor, Engineering
D. Vines, Manager, Corrective Actions and Assessments
J. Vukovics, Supervisor, Reactor Engineering
L. Woods, Manager, Quality Assurance

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000458/2012005-01	NCV	Failure to Maintain Design Control of the Control Building Chilled Water System (Section 1R01)
05000458/2012005-02	NCV	Inadequate Procedures for Lubrication of the Standby Liquid Control Pump Motor Bearings (Section 1R15)
05000458/2012005-03	NCV	Failure to Implement Effective Corrective Actions for Defects in MasterPact Breakers (Section 1R22)
05000458/2012005-04	NCV	Failure to Follow Procedure for Lifting Leads Results in Inoperability of Standby Service Water Fan (Section 4OA3)

Closed

05000458/2011-001-00	LER	SSW Pump Automatically Started During System Realignment (documented in River Bend Station – NRC Integrated Inspection Report 05000458/2012003)
05000458/2012-001-00 and -01	LER	Operations Prohibited by Technical Specifications Due to Inoperability of Division 3 Diesel Generator
05000458/2012-004-00	LER	Operations Prohibited by Technical Specifications Due to Wiring Error in Safety-Related Circuit Breaker

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

CALCULATIONS

NUMBER	TITLE	REVISION
G13.18.2.1*059	Control Building Heat Load Evaluation During LOCA w/Offsite Power Available and Normal Operating Conditions	3
G13.18.2.1*067	Control Building Area Winter Temperatures During Normal and LOCA/LOOP Operating Conditions	1 and 2

CONDITION REPORTS

CR-RBS-2008-07264 CR-RBS-2012-07353

CIRCULAR

NUMBER	TITLE	DATE

CIRCULAR

NUMBER	TITLE	DATE
78-06	Potential Common Mode Flooding of ECCS Equipment Rooms at BWR Facilities	May 31, 1978

ENGINEERING CHANGE REQUESTS

NUMBER	TITLE	REVISION
EC 27437	Setpoint Calculation for Standby Switchgear Room Temperature Controller HVC-TC44a, B A1	4
EC 37922	Control Building Electrical Equipment Heat Release During LOCA Condition With Offsite Power Available and Also Control Building Electrical Heat Release During LOCA Condition Without Offsite Power (LOOP) and With EGS-EG1B Diesel Generator Not Responding	4

INFORMATION NOTICES

NUMBER	TITLE	DATE
83-44	Potential Damage to Redundant Safety Equipment as a Result of Backflow Through the Equipment and Floor Drain System	July 1, 1983
83-44, Supplement 1	Potential Damage to Redundant Safety Equipment as a Result of Backflow Through the Equipment and Floor Drain System	August 30, 1990
87-49	Deficiencies in Outside Containment Flooding Protection	October 9, 1987
88-60	Inadequate Design and Installation of Watertight Penetration Seals	August 11, 1988
92-69	Water Leakage from Yard Area Through Conduits into Buildings	September 22, 1992
94-27	Facility Operating Concerns Resulting from Local Area Flooding	March 31, 1994
98-31	Fire Protection System Design Deficiencies and Common-Mode Flooding of Emergency Core Cooling System Rooms at Washington Nuclear Project Unit 2	August 18, 1998

INFORMATION NOTICES

NUMBER	TITLE	DATE
05-11	Internal Flooding/Spray-Down of Safety-Related Equipment Due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Floor Drains	May 6, 2005
05-30	Safe Shutdown Potentially Challenged by Unanalyzed Internal Flooding Events and Inadequate Design	November 7, 2005
07-01	Recent Operating Experience Concerning Hydrostatic Barriers	January 31, 2007

PROCEDURE

NUMBER	TITLE	REVISION
SOP-0066	Control Building HVAC Chilled Water System (SYS #410)	309

WORK ORDERS

WO 52354781 WO 52374258

Section 1R04: Equipment Alignment

CONDITION REPORTS

CR-RBS-2012-07077 CR-RBS-2012-07444 CR-RBS-2012-07445 CR-RBS-2012-07446
CR-RBS-2012-07452

PROCEDURE

NUMBER	TITLE	REVISION
SEP-FPP-RBS-006	River Bend Station Fire Protection System Impairment	1

Section 1R05: Fire Protection

CONDITION REPORT

CR-RBS-2012-06729

DRAWING

NUMBER	TITLE	REVISION

DRAWING

NUMBER	TITLE	REVISION
0214.400-273-070	Water Spray & Sprinkler Fire Protection	F

PROCEDURES

NUMBER	TITLE	REVISION
AB-095-510	CCP Heat Exchanger Room Fire Area AB-1/Z-2	4
AB-114-526	MCC Area East Fire Area AB-15/Z-3	3
FPP-4514	Spray & Sprinkler Water Flow and Automatic Valve Actuation Tests	004
RB-186-012	Hydrogen Recombiner Area Fire Area RC-3/Z-6 and RC-4/Z-6	3
SOP-0037	Fire Protection Water System Operating Procedure (SYS #251)	032

Section 1R06: Flood Protection Measures

SPECIFICATIONS

NUMBER	TITLE	REVISION
210.461	Pressure Tight Doors, Watertight Doors, and Special Doors	2
229.180	Floor and Wall Sleeve Seals	3

Section 1R07: Heat Sink Performance

CONDITION REPORTS

CR-RBS-2012-02983	CR-RBS-2012-06084	CR-RBS-2012-06451	CR-RBS-2012-06591
CR-RBS-2012-06614	CR-RBS-2012-06872	CR-RBS-2012-06966	CR-RBS-2012-07040

EPRI TECHNICAL REPORTS

NUMBER	TITLE	DATE
NP-7552	Heat Exchanger Performance Monitoring Guidelines	December 1991
TR-1012129	Heat Exchanger Thermal Performance Margin Guidelines	November 2005

EPRI TECHNICAL REPORTS

NUMBER	TITLE	DATE
TR-107397	Service Water Heat Exchanger Testing Guidelines	March 1998

MAINTENANCE ACTION INSTRUCTIONS

NUMBER	TITLE
MAI 323699	CCP Heat Exchanger A
MAI 327150	Turbine Plant Closed Cooling Water Heat Exchanger B
MAI 328283	Turbine Plant Closed Cooling Water Heat Exchanger C
MAI 333127	CCP Heat Exchanger B
MAI 338325	Turbine Plant Closed Cooling Water Heat Exchanger A
MAI 342483	CCP Heat Exchanger C

MISCELLANEOUS

NUMBER	TITLE	REVISION
SDRD-P54	Turbine Plant Component Cooling Water System	0

PROCEDURES

NUMBER	TITLE	REVISION
CSP-0006	Chemistry Surveillance and Scheduling System	32
EN-DC-316	Heat Exchanger Performance and Condition Monitoring	4
PEP-0046	Service Water Heat Exchanger Inspections	04
SEP-FPP-RBS-006	River Bend Station Fire Protection System Impairment	1
SEP-HX-RBS-001	Service Water Heat Exchanger Inspections	1
SEP-HX-RBS-002	Performance Monitoring Program for Residual Heat Removal Heat Exchangers E12-EB001B and E12-EB001D (DIV II)	5
SEP-HX-RBS-003	Performance Monitoring Program for Residual Heat Removal Heat Exchangers E12-EB001A and E12-	2

PROCEDURES

NUMBER	TITLE	REVISION
	EB001C (DIV I)	
STP-303-1601	120 and 480VAC Breaker Overload Functional Test	30
STP-410-3603	Performance Monitoring Program for Control Building Chiller HVK-CHL1C (Division I)	302
STP-410-3603	Performance Monitoring Program for Control Building Chiller HVK-CHL1C (DIVISION I)	302

SYSTEM DESIGN CRITERIA DOCUMENT

NUMBER	TITLE	REVISION
SDC-115	Reactor Plant Component Cooling Water System Design Criteria System Number 115	1

SYSTEM TRAINING MANUAL DOCUMENTS

NUMBER	TITLE	REVISION
R-STM-0115	Reactor Plant Component Cooling Water (CCP) System	6
R-STM-0116	Turbine Plant Component Cooling Water	005

WORK ORDERS

WO 50686997	WO 50686998	WO 50967574	WO 51022057

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

MISCELLANEOUS

NUMBER	TITLE	REVISION
	License Operator Requal Training Cycle 12-11	2

Section 1R12: Maintenance Effectiveness

CONDITION REPORTS

CR-RBS-1987-00707	CR-RBS-2002-00225	CR-RBS-2002-00928	CR-RBS-2002-00934
CR-RBS-2002-01044	CR-RBS-2002-01735	CR-RBS-2003-00154	CR-RBS-2003-00908
CR-RBS-2003-02878	CR-RBS-2004-00346	CR-RBS-2004-01583	CR-RBS-2004-01605

CR-RBS-2004-01715	CR-RBS-2004-02110	CR-RBS-2004-03858	CR-RBS-2005-00999
CR-RBS-2005-01543	CR-RBS-2005-03948	CR-RBS-2006-00888	CR-RBS-2006-01187
CR-RBS-2006-01358	CR-RBS-2006-01815	CR-RBS-2006-01870	CR-RBS-2006-02947
CR-RBS-2006-04478	CR-RBS-2007-00602	CR-RBS-2007-01945	CR-RBS-2007-02030
CR-RBS-2007-02269	CR-RBS-2008-00752	CR-RBS-2008-01209	CR-RBS-2008-01304
CR-RBS-2008-01876	CR-RBS-2008-03621	CR-RBS-2008-04927	CR-RBS-2008-05153
CR-RBS-2008-05938	CR-RBS-2008-06057	CR-RBS-2008-06346	CR-RBS-2008-06527
CR-RBS-2009-00784	CR-RBS-2009-01019	CR-RBS-2009-01053	CR-RBS-2009-02258
CR-RBS-2009-03741	CR-RBS-2009-03821	CR-RBS-2009-04461	CR-RBS-2009-05444
CR-RBS-2009-05447	CR-RBS-2009-06188	CR-RBS-2009-06277	CR-RBS-2009-06426
CR-RBS-2009-06447	CR-RBS-2010-00015	CR-RBS-2010-00745	CR-RBS-2010-00772
CR-RBS-2010-00781	CR-RBS-2010-01609	CR-RBS-2010-01889	CR-RBS-2010-01978
CR-RBS-2010-02086	CR-RBS-2010-02218	CR-RBS-2010-03766	CR-RBS-2010-04013
CR-RBS-2010-04711	CR-RBS-2010-04840	CR-RBS-2010-05133	CR-RBS-2010-05580
CR-RBS-2010-05814	CR-RBS-2010-05846	CR-RBS-2010-06020	CR-RBS-2011-00671
CR-RBS-2011-00718	CR-RBS-2011-00761	CR-RBS-2011-01448	CR-RBS-2011-01489
CR-RBS-2011-01819	CR-RBS-2011-02100	CR-RBS-2011-02815	CR-RBS-2011-04212
CR-RBS-2011-04504	CR-RBS-2011-04679	CR-RBS-2011-05207	CR-RBS-2011-05771
CR-RBS-2011-05780	CR-RBS-2011-07624	CR-RBS-2012-00605	CR-RBS-2012-01177
CR-RBS-2012-02894	CR-RBS-2012-03468	CR-RBS-2012-03620	CR-RBS-2012-03880
CR-RBS-2012-04609	CR-RBS-2012-05033	CR-RBS-2012-05085	CR-RBS-2012-06397
CR-RBS-2012-06631	CR-RBS-2012-06770	CR-RBS-2012-06901	CR-RBS-2012-07348

OPERATING EXPERIENCE SMART SAMPLE

NUMBER	TITLE	DATE
OpESS FY 2010-01	Recent Inspection Experience for Components Installed Beyond Vendor Recommended Service Life	August 16, 2012

PROCEDURES

NUMBER	TITLE	REVISION
EDP-CS-15	River Bend Station Maintenance Rule Structural Monitoring Procedure	003
EN-LI-102	Corrective Action Process	20

SYSTEM DESIGN CRITERIA DOCUMENT

NUMBER	TITLE	REVISION
SDC-305 (ENB)	Safety Related 125 VDC System Design Criteria System Number 203 & 305	2

VENDOR TECHNICAL DOCUMENT

NUMBER	TITLE	REVISION
VTD-B455-0103	Asea Brown-Boveri Installation/Maintenance Instructions Low-Voltage Power Circuit Breakers Type K-225 Thru 2000 and K-600S thru 2000S [PUB. # IB 6.1.2.7-1H]	0

WORK ORDER

WO 00251013

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	REVISION
DC-158	Entergy Nuclear South Unit Seasonal Capability Updating Process	0
ENS-DC-201	ENS Transmission Grid Monitoring	5

Section 1R15: Operability Evaluations and Functionality Assessments

CONDITION REPORTS

CR-RBS-2012-03226 CR-RBS-2012-06570 CR-RBS-2012-06740 CR-RBS-2012-06935

Section 1R18: Plant Modifications

CONDITION REPORTS

CR-RBS-2012-02623 CR-RBS-2012-03132 CR-RBS-2012-03634 CR-RBS-2012-03659
CR-RBS-2012-07136 CR-RBS-2012-07264 CR-RBS-2012-07353

DRAWINGS

NUMBER	TITLE	REVISION
EE-001WB	480V One Line Diagram EHS-MCC16A Standby Cooling Tower No. 1	13
EE-001YA	480V One Line Diagram EHS-MCC16B Standby Cooling Tower No. 1	13

INFORMATION NOTICE

NUMBER	TITLE	DATE
93-64	Periodic Testing and preventive Maintenance of Molded Case Circuit Breakers	August 12, 1993

MISCELLANEOUS

NUMBER	TITLE	REVISION/DATE
G13.18.2.1*067	Control Building Area Winter Temperature During Normal and LOCA/LOOP Operating Conditions	2A
EC-37922	Control Building Electrical Equipment Heat Release During LOCA Condition with Off Site Power Available and also Control Building Electrical Heat Release During LOCA Condition Without Offsite Power (LOOP) and with EGS-EGAB Diesel Generator Not Responding	4
NEMA Standards Publication AB 2-1984	Procedures for Field Inspection and Performance Verification of Molded Case Circuit Breakers Used in Commercial and Industrial Applications	1984
EC-38941	Provide Acceptability for Lubricating Gould/ITE Starters	0
NEMA Standards Publication AB 4-2003	Guidelines for Inspection and Preventive Maintenance of Molded Case Circuit Breakers Used in Commercial and Industrial Applications	2003

WORK ORDER

00316561

Section 1R19: Post-Maintenance Testing

CONDITION REPORTS

CR-RBS-2012-02665 CR-RBS-2012-03379 CR-RBS-2012-05111

PROCEDURE

NUMBER	TITLE	REVISION
STP-256-6304	Standby Service Water B Loop Quarterly Pump and Valve Operability Test	303

WORK ORDERS

WO 00322455 WO 52401235 WO 52427953

Section 1R22: Surveillance Testing

CONDITION REPORTS

CR-RBS-2007-01666 CR-RBS-2012-03387 CR-RBS-2012-04058 CR-RBS-2012-04063
CR-RBS-2012-06694 CR-RBS-2012-06788 CR-RBS-2012-06823

PROCEDURES

NUMBER	TITLE	REVISION
STP-256-6305	DIV I Standby Service Water Quarterly Valve Operability Test	010
STP-257-0202	Standby Gas Treatment System Filter Train B Monthly Operability Test	014

WORK ORDERS

WO 00078520 WO 00175189 WO 00318055

Section 1EP4: Emergency Action Level and Emergency Plan Changes

PROCEDURE

NUMBER	TITLE	REVISION
EIP-2-001	Classification of Emergencies	23

Section 4OA1: Performance Indicator Verification

CONDITION REPORTS

CR-RBS-2011-07622 CR-RBS-2012-00651 CR-RBS-2012-03212 CR-RBS-2012-03212
CR-RBS-2012-03818 CR-RBS-2012-04457 CR-RBS-2012-04729

MISCELLANEOUS

NUMBER	TITLE	DATE
RBG-47203	Electronic Submittal of Fourth Quarter 2011 Performance Indicator Information	January 23, 2012
RBG-47235	Electronic Submittal of First Quarter 2012 Performance Indicator Information	April 23, 2012

PROCEDURE

NUMBER	TITLE	REVISION
EN-LI-114	Performance Indicator Process	5

Section 4OA2: Problem Identification and Resolution

CONDITION REPORT

CR-RBS-2012-05965

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

CONDITION REPORTS

CR-RBS-2012-06325 CR-RBS-2012-07746

MISCELLANEOUS

NUMBER	TITLE
Work Order Template T3250	Adjust Relay Calibrate Allen Bradley RTC

WORK ORDER

WO 51017672