



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

May 07, 2015

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

SUBJECT: RIVER BEND STATION – NRC INTEGRATED INSPECTION  
REPORT 05000458/2015001

Dear Mr. Olson:

On March 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your River Bend Station, Unit 1. On April 10, 2015, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

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

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

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

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public

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Sincerely,

**/RA/**

Gregory Warnick, Chief  
Project Branch C  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000458/2015001  
w/ Attachments: 1) Supplemental Information  
2) Request for Information

cc w/ encl: Electronic Distribution for River Bend Station

E. Olson

- 2 -

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Letter and Inspection Report to Eric W. Olson from Gregory Warnick, dated May 7, 2015

SUBJECT: RIVER BEND STATION - NRC INTEGRATED INSPECTION  
REPORT 05000458/2015001

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 05000458

License: NPF-47

Report: 05000458/2015001

Licensee: Entergy Operations, Inc.

Facility: River Bend Station, Unit 1

Location: 5485 U.S. Highway 61N  
St. Francisville, LA 70775

Dates: January 1 through March 31, 2015

Inspectors: J. Sowa, Senior Resident Inspector  
A. Barrett, Resident Inspector  
B. Parks, Project Engineer  
I. Anchondo, Reactor Inspector  
N. Greene, Ph.D., Health Physicist  
P. Hernandez, Health Physicist  
P. Elkmann, Senior Emergency Preparedness Inspector

Approved By: G. Warnick, Chief  
Project Branch C  
Division of Reactor Projects

## SUMMARY

IR 05000458/2015001; 01/01/2015 - 03/31/2015; River Bend Station; Integrated Resident and Regional Report; Operability Determinations and Functionality Assessments; Plant Modifications; Problem Identification and Resolution

The inspection activities described in this report were performed between January 1 and March 31, 2015, by the resident inspectors at River Bend Station and inspectors from the NRC's Region IV office. Three findings of very low safety significance (Green) are documented in this report. One of these findings involved a violation of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

### Cornerstone: Initiating Events

- Green. The inspectors reviewed a self-revealing finding for the licensee's failure to properly implement Procedure EN-DC-115, "Engineering Change Process," when developing engineering change notice ECN 39186, to ensure that no adverse impacts on the plant were would be encountered. Specifically, when installing new Emergency Response and Information System equipment in the main control room, using ECN 39186, the reactor recirculation pump A unexpectedly tripped, resulting in a reduction in power from 85 percent to 67 percent power. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-06685.

The failure to follow Procedure EN-DC-115, to ensure that no adverse impacts were encountered during the implementation of ECN 39186, is a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is associated with the Initiating Events Cornerstone attribute of design control, and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, implementation of a plant modification resulted in an unexpected trip of the running recirculation pump which led to an unplanned downpower from 85 percent to 67 percent power. The inspectors initially screened the finding in accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using Inspection Manual Chapter 0609, Appendix A, Exhibit 1, "Initiating Events Screening Questions," the inspectors determined this finding is of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown. This finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, individuals and work groups did not communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety was maintained [H.4]. (Section 1R18)

- Green. The inspectors reviewed a self-revealing finding for the licensee's failure to follow Procedure SOP-0093, "Condensate Demineralizer System," Revision 033, following a

reactor scram on October 17, 2014. Specifically, station operators inappropriately removed all 10 condensate demineralizers from service. This resulted in a trip of feedwater pump 1C and a loss of feedwater to the reactor, complicating the scram. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-05209.

On October 17, 2014, the failure of licensee personnel to operate the condensate demineralizer system in accordance with SOP-0093, following a reactor scram, is a performance deficiency. This performance deficiency is more than minor because it affected the configuration control attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, in that this finding resulted in complications to the scram recovery. This finding is of very low safety significance (Green) because it did not cause both a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, operations department did not clearly communicate performance standards and expectations regarding equipment operator actions during abnormal and emergency situations within their own organization, such that nuclear safety was maintained [H.4]. (Section 4OA2)

### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform an adequate operability evaluation in accordance with Entergy Procedure EN-OP-104, "Operability Determination and Functionality Assessment." Specifically, operations staff failed to properly evaluate leakage from the suppression pool through the high pressure core spray system. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-04004.

The failure to perform an adequate operability determination for leakage from the safety-related suppression pool was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it adversely affected the configuration control attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a subsequent operability determination classified the suppression pool as inoperable. The inspectors used NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, to evaluate the issue. The finding required a detailed risk evaluation because it involved the potential loss of system and/or function. A Region IV senior reactor analyst performed a detailed risk evaluation for the issue. In the detailed risk evaluation, the senior reactor analyst concluded that the finding was determined to have very low safety significance (Green) because the high pressure core spray system would have remained functional for 21 days which is in excess of the probabilistic risk assessment mission time of 24 hours. The finding also did not screen as risk significant for large early release frequency. The finding has a cross-cutting aspect in the area of human performance associated with Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. Specifically, station operators, and the condition review group, failed to evaluate the condition of the suppression pool when the source of the leakage was uncertain [H.11]. (Section 1R15)

## PLANT STATUS

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

- On January 16, 2015, operators reduced power to 11 percent to remove the main generator from service and perform maintenance on the isophase bus duct cooling system. The licensee returned the plant to full power on January 21, 2015.
- On January 30, 2015, operators reduced power to 60 percent in order to conduct suppression testing. The licensee returned the plant to full power on February 3, 2015.
- On February 13, 2015, operators reduced power to 78 percent in order to conduct troubleshooting and maintenance on the B main feedwater pump supply breaker. The licensee returned the plant to full power on February 16, 2015.
- On February 22, 2015, operators inserted a manual scram in order to shut down the plant and commence refueling outage 18. A reactor startup was performed on March 27, 2015, and the refueling outage was completed on March 29, 2015. The plant was in the process of raising power to 100 percent at the end of the inspection period.

## REPORT DETAILS

### 1. REACTOR SAFETY

**Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R04 Equipment Alignment (71111.04)

##### .1 Partial Walkdown

##### a. Inspection Scope

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

- January 27, 2015, Division III emergency diesel generator following surveillance testing
- January 28, 2015, Division I emergency diesel generator following planned maintenance
- February 22, 2015, Division II residual heat removal system while Division I in service for shutdown cooling

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the systems were correctly aligned for the existing plant configuration.

These activities constituted three partial system walkdown samples, as defined in Inspection Procedure 71111.04.



b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On February 20, 2015, the inspectors performed a complete system walkdown inspection of the high pressure core spray system. The inspectors reviewed the licensee's procedures and system design information to determine the correct system lineup for the existing plant configuration. The inspectors also reviewed outstanding work orders, open condition reports, in-process design changes, temporary modifications, and other open and closed items tracked by the licensee's operations and engineering departments. The inspectors then visually verified that the system was correctly aligned for the existing plant configuration.

These activities constituted one complete system walkdown sample, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

**1R05 Fire Protection (71111.05)**

Quarterly Inspection

a. Inspection Scope

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

- February 22, 2015, auxiliary building, residual heat removal pump B room, fire area AB-3
- March 2, 2015, reactor building, recirculation pump area, fire area RDW-1
- March 19, 2015, auxiliary building, residual heat removal pump A room, fire area AB-5
- March 20, 2015, diesel building, diesel generator A control room, fire area DG-6/Z-1
- March 20, 2015, diesel building, diesel generator B control room, fire area DG-4/Z-1

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and

suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

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

b. Findings

No findings were identified.

**1R06 Flood Protection Measures (71111.06)**

a. Inspection Scope

On March 19, 2015, the inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose one plant area containing risk-significant structures, systems, and components that were susceptible to flooding:

- High pressure core spray pump room

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

These activities constituted completion of one flood protection measures sample, as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

**1R08 Inservice Inspection Activities (71111.08)**

a. Inspection Scope

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Service Water	SWP-V3113 (Weld No. XI-001 and XI-002)	Liquid Penetrant
Service Water	SWP-V3112 (Weld No. XI-001 and XI-002)	Liquid Penetrant

During the review and observation of each examination, the inspectors observed whether activities were performed in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME) Code requirements and applicable procedures.

The inspectors directly observed a portion of the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Service Water	SWP-V3113 (Weld No. XI-002)	Gas Tungsten Arc Welding/Shielded Metal Arc Welding

The inspectors reviewed records for the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Service Water	SWP-V3113 (Weld No. XI-001)	Gas Tungsten Arc Welding/Shielded Metal Arc Welding
Service Water	SWP-V3112 (Weld No. XI-001)	Gas Tungsten Arc Welding/Shielded Metal Arc Welding
Service Water	SWP-V3112 (Weld No. XI-002)	Gas Tungsten Arc Welding/Shielded Metal Arc Welding

The inspectors reviewed whether the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code, Section IX, requirements. The inspectors also determined whether essential variables were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications.

These activities constituted completion of one inservice inspection sample, as defined in Inspection Procedure 71111.08.

b. Findings

No findings were identified.

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

**.1 Review of Licensed Operator Requalification**

a. Inspection Scope

On January 15, 2015, the inspectors observed simulator training for an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the requalification activities.

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

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

On March 27, 2015, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity due to conducting a reactor startup following a refueling outage.

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

These activities constituted 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 reviewed three instances of degraded performance or condition of safety-related structures, systems, and components:

- March 2, 2015, high pressure core spray system, functional failure review
- March 9, 2015, high pressure core spray diesel generator, functional failure review
- March 18, 2015, EJS-SWG1A, HVK Chiller 1B and 1D failed to start due to position switch control rod out of adjustment

The inspectors reviewed the extent of condition of possible common cause structures, systems, and components failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the structures, systems, and components. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule), and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of three maintenance effectiveness samples, as defined in Inspection Procedure 71111.12.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed five risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- January 9, 2015, Division III standby service water and Division I emergency diesel generator out of service
- February 5, 2015, Division I standby service water and reactor core isolation cooling out of service
- February 18, 2015, Division 2 residual heat removal out of service during pump and valve operability testing
- February 23, 2015, alternate decay heat removal unavailable and primary containment open for refueling outage activities
- February 24, 2015, loss of reactor protection system A leading to loss of shutdown cooling

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

These activities constituted completion of five maintenance risk assessments and emergent work control inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

**1R15 Operability Determinations and Functionality Assessments (71111.15)**

a. Inspection Scope

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

- January 9, 2015, operability determination of a crack in lower pan of the Division I emergency diesel generator intercooler (CR-RBS-2015-00057)

- January 26, 2015, operability determination of broken bolts on Division I emergency diesel generator intake manifold brace (CR-RBS-2015-00169)
- February 5, 2015, operability determination of air leak located at the Division II emergency diesel generator overspeed valve solenoid (CR-RBS-2015-00782)
- February 26, 2015, operability determination of loss of residual heat removal pump A while in shutdown cooling mode (CR-RBS-2015-01216)
- March 2, 2015, operability determination of lowering trend in suppression pool (CR-RBS-2014-03353)

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

The inspectors reviewed operator actions taken or planned to compensate for degraded or nonconforming conditions. The inspectors verified that the licensee effectively managed these operator workarounds to prevent adverse effects on the function of mitigating systems and to minimize their impact on the operators' ability to implement abnormal and emergency operating procedures.

These activities constituted completion of six operability and functionality review samples, which included one operator workaround sample, as defined in Inspection Procedure 71111.15.

b. Findings

Introduction. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform an adequate operability evaluation in accordance with Entergy Procedure EN-OP-104, "Operability Determination and Functionality Assessment," Revision 7. Specifically, operations staff failed to properly evaluate leakage from the suppression pool through the high pressure core spray system.

Description. On July 12, 2014, station operators aligned the high pressure core spray system to the suppression pool from the normal source of the condensate storage tank. During this alignment, operators identified and documented a lowering trend in suppression pool level in Condition Report CR-RBS-2014-03353. The inspectors reviewed the condition report as part of daily plant status reviews and found that the operability evaluation failed to consider the long term effects of potential leakage from the suppression pool during an accident condition. Although the cause of the falling level trend was unknown, the operability evaluation stated that the suppression pool maintained function due to operators being able to refill the pool from the non-safety related condensate system, maintaining level in the required technical specification level band. Plant operators responded to the inspectors concern by performing a troubleshooting plan to understand the source of the leakage. The inspectors continued to challenge the inadequate basis of the operability evaluation, until a subsequent

condition report, CR-RBS-2014-03509, written on July 21, 2014, documented a potential valve seat leakage path through the condensate storage tank test bypass valves (E22-MOVF010 and E22-MOVF011). The operability evaluation for the second condition report classified the high pressure core spray system as operable pending operability evaluation. On August 5, 2014, engineering informed operations that with the estimated system leakage the suppression pool would not remain operable during an accident requiring the injection from the high pressure core spray system. Plant personnel installed a temporary modification (EC-52244) to replace the restricting orifice plate, "HPCS Pump Test Return Line to CST Restriction Orifice," with a blind flange. The installation of the blind flange isolated the leakage from the suppression pool, and plant operators designated the system as operable with a compensatory measure.

Assessment. The failure to perform an adequate operability determination for leakage from the safety-related suppression pool is a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it adversely affected the configuration control attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a subsequent operability determination classified the suppression pool as inoperable.

The inspectors used NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, to evaluate the issue. The finding required a detailed risk evaluation because it involved the loss of system and/or function. A Region IV senior reactor analyst performed a detailed risk evaluation for the issue. In the detailed risk evaluation, the senior reactor analyst concluded that the finding was determined to have very low safety significance (Green) because the high pressure core spray system would have remained functional for 21 days, which is in excess of the probabilistic risk assessment mission time of 24 hours. The finding also did not screen as risk significant for large early release frequency. The finding has a cross-cutting aspect in the area of human performance associated with Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. Specifically, station operators, and the condition review group, failed to evaluate the condition of the suppression pool when the source of the leakage was uncertain [H.11].

Enforcement. Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings. Entergy Procedure EN-OP-104, step 5.3.4, required that operations personnel "determine the impact of the Degraded or Non-Conforming Condition on the TS SSC on the specified safety function." Contrary to this requirement, operations personnel failed to determine the impact of the high pressure core spray system leakage on the safety function of maintaining adequate suppression pool level for 30 days. Because this violation was of very low safety significance (Green) and was entered into the licensee's corrective action program as Condition Report CR-RBS-2014-04004, this violation is being treated as a non-cited violation in accordance with section 2.3.2.a of the NRC Enforcement Policy: NCV 05000458/2015001-01, "Failure to Perform Adequate Operability Evaluations on Degraded High Pressure Core Spray System."

c. Observations

During the performance of the operator workaround inspection sample, inspectors identified issues of concern related to the station's classification of deficient conditions as operator work arounds. These issues of concern were incorporated into the charter for the special inspection team that was onsite on January 26, 2015, and were dispositioned during the course of their inspection activities.

**1R18 Plant Modifications (71111.18)**

a. Inspection Scope

The inspectors reviewed a permanent plant modification to the Emergency Response and Information System (ERIS) that affected risk-significant structures, systems, and components.

The inspectors reviewed the design and implementation of the modification. The inspectors verified that work activities involved in implementing the modification did not adversely impact operator actions that may be required in response to an emergency or other unplanned event. The inspectors verified that post-modification testing was adequate to establish the functionality of the structures, systems, and components as modified.

These activities constituted completion of one sample of permanent modifications, as defined in Inspection Procedure 71111.18.

b. Findings

Introduction. The inspectors reviewed a Green self-revealing finding for the licensee's failure to properly implement Procedure EN-DC-115, "Engineering Change Process," when developing engineering change notice ECN 39186, to ensure that no adverse impacts on the plant would be encountered. Specifically, when installing new Emergency Response and Information System equipment in the main control room, using ECN 39186, the reactor recirculation pump A unexpectedly tripped, resulting in a reduction in power from 85 percent power to 67 percent power.

Description. On December 30, 2014, with the plant stable at 85 percent power, technicians performed work order 352158 to install a modification to the ERIS system. ECN 39186 was issued as part of the ERIS upgrade project to replace hardware in ERIS interface panel H13-Y710B. The ECN 39186 operational impact was classified as plant indication only. With this classification, no conditions other than indications were expected to occur as a result of the modification. During installation of the modification, reactor recirculation pump A tripped. The station encountered three instances where personnel could have stopped and reviewed the work being performed for accuracy, system impact, risk, or change of intent. These instances included:

1. A dual indication on the reactor recirculation pump breaker 4A and 4B status light was unexpectedly encountered during implementation of the modification. A condition report was initiated and a failure mode analysis team was formed. Results of the investigation determined that the ERIS modification caused the dual indication and that this condition should not have occurred. A cable that was installed during



the modification was removed to clear the dual light indication and the station proceeded with the modification.

2. Work at Risk (WAR) ECNs provide a method to minimize work stoppages for minor field changes. In response to the previously mentioned dual indication issue, the licensee implemented a WAR ECN, while the modification installation was in process. During this effort, the station unexpectedly experienced a Division II 125 Vdc ground fault alarm when installing a connector in accordance with the ECN. This condition was evaluated as a non-adverse reference to the WAR ECN. No technical review of the condition was performed to determine if this was an expected condition. Communication between the contractor and the station's engineering department regarding this condition did not occur.
3. On December 30, 2014, due to the work management center not being manned, station personnel brought work order 352158 directly to the control room for approval of implementation. The work order was not on the schedule. Station personnel discussed the work order details with the control room supervisor. The control room supervisor questioned what effect this would have on the plant, but failed to question if the work package had been routed to the operations department for review. This resulted in a failure to properly review the impact of the work scope. At 1457, electricians loosened a terminal screw, per the work instructions. This action caused the control cabinet optical isolators to lose power, which in-turn resulted in the loss of power to the 125 Vdc power supply. This caused relays to de-energize, and contacts to close which resulted in a trip of the recirculation pump A, and a subsequent unplanned downpower to 67 percent.

Analysis. The failure to follow Procedure EN-DC-115, to ensure that no adverse impacts were encountered during the implementation of ECN 39186, was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is associated with the Initiating Events Cornerstone attribute of design control, and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, a modification implementation resulted in an unexpected trip of the running recirculation pump A which led to an unplanned downpower from 85 percent to 67 percent power. The inspectors initially screened the finding in accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for (SDP) for Findings At-Power." Using Inspection Manual Chapter 0609, Appendix A, Exhibit 1, "Initiating Events Screening Questions," the inspectors determined this finding is of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown. This finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, individuals and work groups did not communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety was maintained [H.4].

Enforcement. Enforcement action does not apply because the performance deficiency did not involve a violation of regulatory requirements. The finding is of very low safety significance, and the issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2014-6685: FIN 05000458/2015001-02, "Inadequate

## Engineering Change and Work Instruction Review Results in Reactor Recirculation Pump Trip”

### **1R19 Post-Maintenance Testing (71111.19)**

#### **a. Inspection Scope**

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

- January 15, 2015, WO 00401515, “Weld Repair on Lower Pan of Division I Emergency Diesel Generator Intercooler”
- January 15, 2015, WO 00287227, “49X Gould Relay Replacement on Reactor Core Isolation Cooling”
- January 26, 2015, WO 00401489, “Standby Service Water Pump 2C Breaker E22-S004 Power Fuse Block Broke”
- January 30, 2015, WO 00387488, “Repair of RCIC ICS-V351 (Steam Leak)”
- March 17, 2015, WO 50358103, “Performance of STP-208-3604, D Steam Line MSIV’s and Outboard Drain Valve Leak Rate Test and Inboard MSIV Inleakage Test,” following maintenance on D Steam Line Outboard Main Steam Isolation Valve B21-AOVF028D
- March 25, 2015, WO 00406805, “Replace Standby Switchgear Room Air Handling 2B Motor Control Relay 62”

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

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

#### **b. Findings**

No findings were identified.

### **1R20 Refueling and Other Outage Activities (71111.20)**

#### **a. Inspection Scope**

During the station’s refueling outage that concluded on March 29, 2015, the inspectors evaluated the licensee’s outage activities. The inspectors verified that the licensee considered risk in developing and implementing the outage plan, appropriately managed

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

- Review of the licensee's outage plan prior to the outage
- Monitoring of shut-down and cool-down activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Review and verification of the licensee's fatigue management activities
- Observation and review of fuel handling activities
- Monitoring of heat-up and startup activities

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

b. Findings

No findings were identified.

**1R22 Surveillance Testing (71111.22)**

a. Inspection Scope

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

Inservice tests:

- January 29, 2015, STP-201-6310, "Standby Liquid Control (SLC) Pump and Valve Quarterly Inservice Test," performed on January 29, 2015

Containment isolation valve surveillance tests:

- March 23, 2015, STP-208-3604, "D Steam Line MSIV's and Outboard Drain Valve Leak Rate Test and Inboard MSIV Inleakage Test," performed on March 5, 2015
- March 25, 2015, STP-202-3811, "ADS Air System Penetration KJB-Z103 Valve Leak Rate Test," performed on February 24, 2015

Other surveillance tests:

- January 28, 2015, STP-309-0203, "Division III Diesel Generator Operability Test," performed on January 26, 2015
- January 30, 2015, STP-051-4556, "HPCS Drywell Pressure High, Channel Functional Test (B21-N667R)," performed on January 27, 2015
- January 30, 2015, STP-051-4532, "ECCS/HPCS Reactor Vessel Water Level Low Low, Level 2; Hi Level 8 Channel Functional Test," performed on January 27, 2015

- March 9, 2015, STP-055-0700, "Reactor Mode Switch Refueling Interlocks Functional Test," performed on February 26, 2015

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

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

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**

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

a. Inspection Scope

The inspector performed an in-office review of the following documents:

- Emergency Plan, Revision 41;
- Procedure EIP-2-001, "Classification of Emergencies," Revision 25;
- Procedure EIP-2-006, "Notifications," Revision 42; and
- Procedure EIP-2-007, "Protective Action Recommendation Guidelines," Revision 26.

The emergency plan revision and procedure changes were submitted to the NRC on December 16, 2014. These revisions:

- Implemented a computer-based system as the primary method for distributing emergency notification messages to offsite authorities;
- Designated the State and Local Hotline as the alternate method for distributing emergency notification messages to offsite authorities;
- Revised the six-year exercise objective cycle to an eight-year exercise cycle, consistent with the requirements of Appendix E to 10 CFR 50, Part IV.F.2.j;
- Implemented the Unified RASCAL Interface version of RASCAL as the primary dose assessment system, replacing the previous CADAP program;
- Revised Letters of Agreement with offsite agencies and authorities to include responses to hostile actions at the River Bend site;

- Added the Saint Francisville Volunteer Fire Department as an agency that may be requested to support the River Bend site;
- Provided more details about the functions performed by the West Feliciana Parish Sheriff;
- Revised the scheme for recommending protective actions for the public to recommend that members of the public not at radiological risk be advised to monitor Emergency Alert System broadcasts and be prepared to take further measures as recommended by offsite authorities (“monitor and prepare”); and
- Designated Teledyne Brown Engineering as an alternate radiological laboratory which may be utilized for the radiological analysis of environmental samples.

These revisions were compared to their previous revisions, to the criteria of NUREG-0654, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revisions adequately implemented the requirements of 10 CFR 50.54(q)(3) and 50.54(q)(4). The inspector verified that the revisions did not decrease the effectiveness of the emergency plan. This review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection.

These activities constituted completion of four emergency action level and emergency plan change samples, as defined in Inspection Procedure 71114.04.

b. Findings

No findings were identified.

## 2. **RADIATION SAFETY**

### **Cornerstone: Occupational and Public Radiation Safety**

#### **2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)**

a. Inspection Scope

The inspectors assessed the licensee’s performance in assessing the radiological hazards in the workplace associated with licensed activities. The inspectors assessed the licensee’s implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures. The inspectors walked down various portions of the plant and performed independent radiation dose rate measurements. The inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors reviewed licensee performance in the following areas:

- The hazard assessment program, including a review of the licensee’s evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels

- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions
- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability
- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage, and contamination controls, the use of electronic dosimeters in high noise areas, dosimetry placement, airborne radioactivity monitoring, controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools, and posting and physical controls for high radiation areas and very high radiation areas
- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements
- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure controls since the last inspection

These activities constituted completion of one sample of radiological hazard assessment and exposure controls, as defined in Inspection Procedure 71124.01.

b. Findings

No findings were identified.

## **2RS2 Occupational ALARA Planning and Controls (71124.02)**

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining occupational, individual, and collective radiation exposures as low as is reasonably achievable (ALARA). During the inspection, the inspectors interviewed licensee personnel and reviewed licensee performance in the following areas:

- Site-specific ALARA procedures and collective exposure history, including the current 3-year rolling average, site-specific trends in collective exposures, and source-term measurements
- ALARA work activity evaluations/postjob reviews, exposure estimates, and exposure mitigation requirements
- The methodology for estimating work activity exposures, the intended dose outcome, the accuracy of dose rate and man-hour estimates, and intended versus actual work activity doses and the reasons for any inconsistencies

- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Audits, self-assessments, and corrective action documents related to ALARA planning and controls since the last inspection

These activities constituted completion of one sample of occupational ALARA planning and controls, as defined in Inspection Procedure 71124.02.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

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

**4OA1 Performance Indicator Verification (71151)**

.1 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors reviewed licensee event reports for the period of January 1, 2014, through December 31, 2014, to determine the number of scrams that occurred. The inspectors compared the number of scrams reported in these licensee event reports to the number reported for the performance indicator. Additionally, the inspectors sampled monthly operating logs to verify the number of critical hours during the period. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned scrams per 7000 critical hours performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors reviewed operating logs, corrective action program records, and monthly operating reports for the period of January 1, 2014, through December 31, 2014, to determine the number of unplanned power changes that occurred. The inspectors

compared the number of unplanned power changes documented to the number reported for the performance indicator. Additionally, the inspectors sampled monthly operating logs to verify the number of critical hours during the period. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned power outages per 7000 critical hours performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Unplanned Scrams with Complications (IE04)

a. Inspection Scope

The inspectors reviewed the licensee's basis for including or excluding in this performance indicator each scram that occurred between January 1, 2014, through December 31, 2014. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned scrams with complications performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors reviewed corrective action program records documenting unplanned exposures and losses of radiological control over locked high radiation areas and very high radiation areas during the period of July 1, 2014, to December 31, 2014. The inspectors reviewed a sample of radiologically controlled area exit transactions showing exposures greater than 100 mrem. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the occupational exposure control effectiveness performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.



.5 Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences (PR01)

a. Inspection Scope

The inspectors reviewed corrective action program records for liquid or gaseous effluent releases that occurred between July 1, 2014, and December 31, 2014, and were reported to the NRC to verify the performance indicator data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the radiological effluent technical specifications RETS/offsite dose calculation manual (ODCM) radiological effluent occurrences performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

**40A2 Problem Identification and Resolution (71152)**

.1 Routine Review

a. Inspection Scope

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

b. Findings

No findings were identified.

.2 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected one issue for an in-depth follow-up:

- On October 17, 2014, the station experienced a scram from 100 percent power due to a malfunction in the main turbine electrohydraulic control system.

Following the scram, a human performance event occurred when operators erroneously removed all condensate demineralizers from service. This caused a loss of all feedwater pumps, which complicated the scram recovery. The station documented the event in Condition Report CR-RBS-2014-05209, and performed a root cause analysis. The station identified the cause as operations department management had not clearly defined expectations for operators regarding actions taken with the condensate demineralizer system following a transient. The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to prevent recurrence.

The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to correct the condition.

These activities constituted completion of one annual follow-up sample, as defined in Inspection Procedure 71152.

b. Findings

Introduction. The inspectors reviewed a self-revealing Green finding for the licensee's failure to follow Procedure SOP-0093, "Condensate Demineralizer System," Revision 033, following a reactor scram on October 17, 2014.

Description. On October 17, 2014, a malfunction in the electrohydraulic control system resulted in a reactor scram on high neutron flux. Main control room operators entered appropriate procedures for reactor and main turbine trips. The main control room operators secured reactor feedwater pumps 1A and 1B in accordance with station transient response procedures. Shortly thereafter, reactor feedwater pump 1C tripped on low suction pressure, and the main control room operators entered abnormal operating Procedure AOP-0006 for condensate and feedwater failures. The loss of all feedwater pumps resulted in the reactor pressure vessel level declining below the low water level isolation setpoint of 9.7 inches, which resulted in a Level 3 actuation.

The licensee's post trip review identified that following the initial scram announcement, by the main control room, the auxiliary control room operators removed all 10 condensate demineralizers from service without contacting the main control room. The licensee identified that following a scram, condensate demineralizers are normally removed from service as needed to maintain individual demineralizer flow rates within optimal bands (1250 – 3100 gpm). During the conduct of interviews, neither of the auxiliary control room operators recognized that removal of all 10 condensate demineralizers from service would result in a loss of reactor feedwater following the scram. Procedure SOP-0093, "Condensate Demineralizer System," Revision 033, step 5.1.3, allowed for the removal of demineralizers from service, provided the remaining effluent flow rates were maintained between 1250 – 3100 gpm. Preceding this step was a note that allowed effluent flow to be reduced as low as 500 gpm following a plant transient in order to prevent physical damage to the demineralizers. The operators performing this task did not maintain effluent flow rates between 1250 – 3000 gpm, nor above 500 gpm. Notification to the main control room did not occur until after all

demineralizers were isolated, and the error was recognized by the main control room upon the loss of feedwater pump 1C.

The inspectors reviewed the root cause evaluation, performed under Condition Report CR-RBS-2014-5209, and determined that on October 17, 2014, the licensee had failed to appropriately follow Procedure SOP-0093, "Condensate Demineralizer System," Revision 033, when removing demineralizers from service following a plant scram. The inspectors determined that the cause of this finding was that the operations department management had not clearly defined performance standards and expectations regarding actions taken by auxiliary control room operators during abnormal and emergency situations. The licensee's corrective actions included procedure revisions to clearly state requirements for demineralizer operation following a transient.

Analysis. On October 17, 2014, the failure of licensee personnel to operate the condensate demineralizer system in accordance with SOP-0093, following a reactor scram, was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it affected the configuration control attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, in that this finding resulted in complications to the scram recovery. The inspectors used Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at-Power," Exhibit 1, Initiating Events, to determine that this finding is of very low safety significance (Green) because it did not cause both a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, operations department did not clearly communicate performance standards and expectations regarding equipment operator actions during abnormal and emergency situations within their own organization, such that nuclear safety was maintained [H.4].

Enforcement. Enforcement action does not apply because the performance deficiency did not involve a violation of regulatory requirements. Because this finding does not involve a violation and is of very low safety significance, this issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2014-05209: FIN 05000458/2015001-03, "Failure to Operate Condensate Demineralizer System Following Reactor Scram Results in Loss of All Feedwater."

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

- .1 (Closed) Licensee Event Report 05000458/2014-002-00: Reactor Scram Due to Average Power Range Monitor High-Flux Signal Following a Malfunction of the Main Turbine Electrohydraulic System

This licensee event report described a scram from 100 percent power that occurred on October 17, 2014. A malfunction in the main turbine electrohydraulic control system caused the main turbine steam bypass valves to fully open and also caused all four main turbine control valves to close. The resultant increase in reactor steam pressure caused reactor power to reach the high neutron flux trip setpoint, and the reactor protection system initiated a reactor scram. A human performance error occurred following the

scram when auxiliary control room operators inadvertently secured all condensate demineralizers which caused reactor feedwater pump 1C to secure due to low suction pressure. The resultant loss of all feedwater to the vessel caused the station to receive and take action for a low vessel level, or Level 3, isolation. Following the scram, the station commenced a plant cooldown and entered Mode 4 in order to troubleshoot and repair the electrohydraulic control system. The licensee determined the apparent cause of the failure to be a fault on any one of three circuit cards in the electrohydraulic control system. The licensee was unable to determine the failure mode and calibrated, tested, and reinstalled new cards. The old cards were quarantined and sent to a laboratory for failure determination.

The licensee submitted LER 05000458/2014-002-00 to report this event in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event or condition that resulted in automatic actuation of the reactor protection system. The licensee entered this issue into its corrective action program as Condition Report CR RBS-2014-05200. Following repairs to the electrohydraulic control system, the station performed a reactor startup on October 23, 2014. The licensee installed monitoring equipment on the electrohydraulic control system and initiated causal evaluations for the electrohydraulic control equipment failures and the human performance event associated with the loss of feedwater. The significance and enforcement aspects of this issue are discussed in Section 4OA2.2 of this inspection report. LER 05000458/2014-002-00 is closed.

- .2 (Closed) Licensee Event Report 05000458/2014-004-00: Unanalyzed Condition of the Ultimate Heat Sink That Degraded Its Ability to Perform Its Design Safety Function Due to Water Inventory Less Than Requirement of Accident Analysis

Reference NRC Component Design Bases Inspection Report 05000458/2014007 for associated discussion and violation. LER 05000458/2014-004-00 is closed.

- .3 (Closed) Licensee Event Report 05000458/2014-005-00: Loss of High Pressure Core Spray / Suppression Pool Safety Functions and Operations Prohibited by Technical Specifications due to Leakage Through Pump Test Return Line

This licensee event report described the inoperability of the high pressure core spray system due to an apparent leakage path through the pump test return line to the condensate storage tank. An engineering evaluation determined that if the high pressure core spray system initiated in response to a design basis event, leakage to the condensate storage tank could cause the suppression pool inventory to be depleted to the extent that the pool would not support the required thirty day mission time assumed in the accident analysis. The licensee submitted LER 05000458/2014-005-00 to report this event in accordance with 10 CFR 50.73(a)(2)(v) as an event that defeated the safety function of the high pressure core spray system. The significance and enforcement aspects of this issue are discussed in Section 1R15 of this inspection report. LER 05000458/2014-005-00 is closed.

These activities constituted completion of three event follow-up samples, as defined in Inspection Procedure 71153.

#### **4OA6 Meetings, Including Exit**

##### Exit Meeting Summary

On March 3, 2015, the inspectors presented the Inservice inspection results to Mr. R. Gadbois, General Manager, Plant Operations, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On March 6, 2015, the inspectors presented the radiation safety inspection results to Mr. E. Olson, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On March 12, 2015, the inspector discussed the results of the in-office inspection of changes to the licensee's emergency plan and emergency action implementing procedures with Mr. T. Schenk, Manager, Emergency Preparedness, and other members of the licensee staff. The licensee acknowledged the results.

On April 10, 2015, the inspectors presented the integrated inspection results to Mr. C. Rich, General Manager, Plant Operations, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

C. Blankenship, Specialist, Radiation Protection  
T. Brumfield, Director, Regulatory & Performance Improvement  
G. Bush, Manager, Material, Procurement, and Contracts  
M. Chambers, Supervisor, Radiation Protection  
G. Chatterton, Engineer  
J. Clark, Manager, Regulatory Assurance  
B. Cole, Manager, Radiation Protection  
F. Corley, Manager, Design & Program Engineering  
K. Crissman, Senior Manager, Maintenance  
L. Dautel, ALARA Supervisor, Radiation Protection  
R. Doerr, Supervisor, Engineering  
B. Ford, Senior Manager, Fleet Regulatory Assurance  
R. Gadbois, General Manager, Plant Operations  
T. Gates, Manager, Operations Support  
K. Hallaran, Manager, Chemistry  
J. Henderson, Assistant Manager, Operations  
B. Hite, Technical Support Supervisor, Radiation Protection  
K. Huffstatler, Senior Licensing Specialist, Licensing  
R. Leasure, Superintendent, Radiation Protection  
P. Lucky, Manager, Performance Improvement  
J. Maher, Manager, Systems & Components Engineering  
D. Moody, Supervisor, Radiation Protection  
J. Morgan, Specialist, Radiation Protection  
P. O'Conner, Manager, Training  
E. Olson, Site Vice President  
W. Renz, Director, Emergency Planning, Entergy South  
J. Reynolds, Manager, Operations  
C. Rich, General Manager, Plant Operations  
T. Santy, Manager, Security  
T. Schenk, Manager, Emergency Preparedness  
S. Vazquez, Director, Engineering  
J. Vukovics, Supervisor, Reactor Engineering  
J. Wieging, Senior Manager, Production  
D. Yoes, Manager, Quality Assurance

### **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

#### **Opened and Closed**

05000458/2015-001-01	NCV	Failure to Perform Adequate Operability Evaluations on Degraded High Pressure Core Spray System (Section 1R15)
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05000458/2015-001-02	FIN	Inadequate Engineering Change and Work Instruction Review Results in Reactor Recirculation Pump Trip (Section 1R18)
05000458/2015-001-03	FIN	Failure to Operate Condensate Demineralizer System Following Reactor Scram Results in Loss of All Feedwater (Section 4OA2)

#### Closed

05000458/2014-002-00	LER	Reactor Scram Due to Average Power Range Monitor High-Flux Signal Following a Malfunction of the Main Turbine Electrohydraulic System
05000458/2014-004-00	LER	Unanalyzed Condition of the Ultimate Heat Sink That Degraded Its Ability to Perform Its Design Safety Function Due to Water Inventory Less Than Requirement of Accident Analysis
05000458/2014-005-00	LER	Loss of High Pressure Core Spray / Suppression Pool Safety Functions and Operations Prohibited by Technical Specifications due to Leakage Through Pump Test Return Line

### **LIST OF DOCUMENTS REVIEWED**

#### **Section 1R04: Equipment Alignment**

##### Condition Reports

CR-RBS-2010-03744	CR-RBS-2011-08100	CR-RBS-2012-01347	CR-RBS-2012-01366
CR-RBS-2012-01771	CR-RBS-2012-02554	CR-RBS-2012-03531	CR-RBS-2012-04816
CR-RBS-2013-00710	CR-RBS-2014-03509	CR-RBS-2014-03780	CR-RBS-2015-00566
CR-RBS-2015-01094	CR-RBS-2015-01096		

##### Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
PID-08-09A	System 309 Diesel Generator	14
PID-08-09B	System 309 Diesel Generator	22
PID-08-09C	System 309 Diesel Generator	17

##### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-MA-133	Control of Scaffolding	11
SOP-0030	High Pressure Core Spray	29
SOP-0031	Residual Heat Removal (SYS #204)	323

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
SOP-0052	HPCS Diesel Generator (SYS #309)	053
SOP-0053	Standby Diesel Generator and Auxiliaries (SYS #309)	331

### Work Orders (WOs)

WO 00293248      WO 00293249      WO 00293251

### **Section 1R05: Fire Protection**

#### Condition Report (CR)

CR-RBS-2015-02240

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AB-070-502	RHR Pump A Room Fire Area AB-5	4
AB-070-505	RHR Pump B Room Fire Area AB-3	3
DG-098-051	Diesel Generator B Control Room Fire Area DG-4/Z-1	4
DG-098-055	Diesel Generator A Control Room Fire Area DG-6/Z-1	4
RB-095-001	Recirculation Pump Area Fire Area RDW-1	3

### **Section 1R06: Flood Protection Measures**

#### Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
PN-317	Max Flood Elevations for Moderate Energy Line Cracks in Cat I Structures	1
PN-317	Max Flood Elevations for Moderate Energy Line Cracks in Cat I Structures	Add 0B

#### Condition Reports (CRs)

CR-RBS-1999-00993      CR-RBS-2011-02984      CR-RBS-2011-03156      CR-RBS-2011-03272



## Section 1R08: Inservice Inspection Activities

### Condition Reports (CRs)

CR-RBS-2013-01357	CR-RBS-2013-01420	CR-RBS-2013-01785	CR-RBS-2013-02442
CR-RBS-2013-03988	CR-RBS-2013-05358	CR-RBS-2013-05881	CR-RBS-2014-03167
CR-RBS-2014-04678	CR-RBS-2015-01252		

### Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
PCD-SWP-026-CD-C	Tunnel Piping West of Aux. Bldg.	8
PCD-SWP-028-CD-C	Tunnel Piping West of Aux. Bldg.	10

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CEP-NDE-0730	Non-Section XI Magnetic Particle Examination (MT)	4
CEP-NDE-0965	Visual Welding Inspection ASME, ANSE, B31.1	3
CEP-SNB-001	Dynamic Restraint (Snubber) Examination and Testing Program	4
EN-LI-102	Corrective Action Program	24
EN-MA-123	Identification and Trending of Rework	7
EN-OP-111	Operational Decision-Making Issue (ODMI) Process	11

### Work Orders (WOs)

WO 00323582	WO 00342876	WO 00350619	WO 00381502	WO 00388557
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### Work Tracker (WT-WTRBS)

2014-0293

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

### Condition Report (CR)

CR-RBS-2015-00280

## Section 1R12: Maintenance Effectiveness

### Condition Reports (CRs)

CR-RBS-2011-01830	CR-RBS-2012-01986	CR-RBS-2012-04399	CR-RBS-2012-07157
CR-RBS-2013-02859	CR-RBS-2013-03462	CR-RBS-2013-04006	CR-RBS-2013-04460
CR-RBS-2013-04522	CR-RBS-2013-06131	CR-RBS-2013-06789	CR-RBS-2013-06843
CR-RBS-2013-06869	CR-RBS-2013-07306	CR-RBS-2013-07677	CR-RBS-2014-00908
CR-RBS-2014-01058	CR-RBS-2014-02156	CR-RBS-2014-03353	CR-RBS-2014-03483
CR-RBS-2014-03509	CR-RBS-2014-03532	CR-RBS-2014-03686	CR-RBS-2014-03778
CR-RBS-2014-05481	CR-RBS-2014-05483	CR-RBS-2014-05538	CR-RBS-2014-05548
CR-RBS-2014-05556	CR-RBS-2014-06569	CR-RBS-2015-00335	CR-RBS-2015-00348
CR-RBS-2015-00354	CR-RBS-2015-00373	CR-RBS-2015-00387	CR-RBS-2015-02040

### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RBS-SE-13-00016	Maintenance Rule Basis Document, MRBD-203, High Pressure Core Spray	0
	System 203 – High Pressure Core Spray System Health Report, 3 <sup>rd</sup> Quarter 2014	0
	System 309 – High Pressure Core Spray System Diesel Generator Health Report, 3 <sup>rd</sup> Quarter 2014	0

### Work Orders (WOs)

WO 00409017      WO 00409022

## Section 1R13: Maintenance Risk Assessments and Emergent Work Control

### Condition Reports (CRs)

CR-RBS-2015-00050    CR-RBS-2015-00057    CR-RBS-2015-01216

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
ADM-0096	Risk Management Program Implementation and On-Line Maintenance Risk Assessment	315
AOP-0051	Loss of Decay Heat Removal	313
OSP-0034	Control of Obstructions for Primary Containment/Fuel Building Operability	014
OSP-0037	Shutdown Operations Protection	032
STP-204-1301	LPCI Pump B Start Time Delay Channel Calibration and Channel Functional Test	19

## Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP-204-6302	Division II LPCI (RHR) Pump and Valve Operability	29

## **Section 1R15: Operability Determinations and Functionality Assessments**

### Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
4244.700-041-033	RBS SDG Intake System Weak Link Analysis	0
G13.18.10.1-014	Standby Diesel Generator Fuel Oil Storage Tank Capacity	0
G13.18.10.2-68	Turbocharger Discharge Piping - Intercooler Nozzle Weld Size	0

### Condition Reports (CRs)

CR-RBS-1989-00173	CR-RBS-1990-00752	CR-RBS-1990-01194	CR-RBS-1996-00051
CR-RBS-1997-01155	CR-RBS-1998-01408	CR-RBS-2001-01676	CR-RBS-2009-06148
CR-RBS-2015-00057	CR-RBS-2015-00169	CR-RBS-2015-00169	CR-RBS-2015-00169
CR-RBS-2015-00411	CR-RBS-2015-00782	CR-RBS-2015-01216	CR-RBS-2015-02103
CR-RBS-2015-02122			

### Engineering Document

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MR 89-0074	Modification Request - Add Intake Manifold Bracing	0

## Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AOP-0051	Loss of Decay Heat Removal	313
EN-OP-104	Operability Determination Process	7
OSP-0034	Control of Obstructions for Primary Containment/Fuel Building Operability	014
OSP-0037	Shutdown Operations Protection	032

## **Section 1R19: Post-Maintenance Testing**

### Condition Reports (CRs)

CR-RBS-2015-00057	CR-RBS-2015-00477	CR-RBS-2015-00495	CR-RBS-2015-01125
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### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	Operator Narrative Logs	January 12, 2015
	Operator Narrative Logs	January 13, 2015

### Procedure

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
STP-208-3604	'D' Steam Line MISV's and Outboard Drain Valve Leak Rate Test and Inboard MSIV Inleakage Test	012

### Work Orders (WOs)

WO 00287227	WO 00387488	WO 00401489	WO 00401515	WO 00406805
WO 50358103	WO 52592249			

## **Section 1R20: Refueling and Other Outage Activities**

### Condition Reports

CR-RBS-2015-00443	CR-RBS-2015-01087	CR-RBS-2015-01102	CR-RBS-2015-01138
CR-RBS-2015-01140	CR-RBS-2015-01145	CR-RBS-2015-01147	CR-RBS-2015-01216
CR-RBS-2015-01338	CR-RBS-2015-01390	CR-RBS-2015-01403	CR-RBS-2015-01434
CR-RBS-2015-01450	CR-RBS-2015-01545	CR-RBS-2015-01699	CR-RBS-2015-01712
CR-RBS-2015-01725	CR-RBS-2015-01783	CR-RBS-2015-01793	CR-RBS-2015-02100

### Drawing

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0247.130-000.044	Reactor Protection System Elementary and Connection Diagram C71-S001A	C

### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
EN #50774	Reactor Plant Event Notification Worksheet	December 6, 2015
	Onsite Safety Review Committee Packages	March 19, 2015 March 22, 2015

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AOP-0051	Loss of Decay Heat Removal	313

## Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-OP-111, Attachment 9.2	Operational Decision-Making Issue (ODMI) Process - Reactor Protection System Motor Generator Set 'B' Loss of Output Voltage, Dated 02/21/2015	11
EN-OP-111, Attachment 9.2	Operational Decision-Making Issue (ODMI) Process - Reactor Protection System 'A' Motor Generator Set Output Breaker CB Tripped, Dated 03/03/2015	11
GOP-0001	Plant Startup	084
GOP-0002	Power Decrease/Plant Shutdown	071
GOP-0003	Scram Recovery	024
OSP-0033	Operations with a Potential to Drain the Reactor Vessel	011
OSP-0034	Control of Obstructions for Primary Containment/Fuel Building Operability	014
OSP-0037	Shutdown Operations Protection Plan (SOPP)	032

## Work Order (WO)

WO 00346642

## **Section 1R22: Surveillance Testing**

### Condition Reports (CRs)

CR-RBS-2007-00402	CR-RBS-2014-05911	CR-RBS-2014-05955	CR-RBS-2015-01165
CR-RBS-2015-01277	CR-RBS-2015-01282	CR-RBS-2015-01359	CR-RBS-2015-01360
CR-RBS-2015-02357	CR-RBS-2015-02372		

### Engineering Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EC-46431	RF-17 Post Outage - LLRT Frequency Determination	0
SEP-APJ-004	River Bend Station Primary Containment Leakage Rate Testing (Appendix J) Program	3

## Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
FHP-0001	Control of Fuel Handling and Refueling Operations	035
STP-051-4532	ECCS/HPCS-Reactor Vessel Water Level-Low Low, Level 2; Hi Level 8 Channel Functional Test (B21-N673C, B21-N674C)	008
STP-051-4556	HPCS-Drywell Pressure-High, Channel Functional Test (B21-N667R)	6A
STP-055-0700	Reactor Mode Switch Refueling Interlocks Functional Test	302
STP-201-6310	SLC Pump and Valve Operability Test	309
STP-202-3811	ADS Air System Penetration KJB-Z103 Valve Leak Rate Test	013
STP-208-3601	'A' Steam Line MSIV's and Outboard Drain Valve Leak Rate Test and Inboard MSIV Inleakage Test	010
STP-208-3602	'B' Steam Line MSIV's and Outboard Drain Valve Leak Rate Test and Inboard MSIV Inleakage Test	010 & 011
STP-208-3603	'C' Steam Line MSIV's and Outboard Drain Valve Leak Rate Test and Inboard MSIV Inleakage Test	010
STP-208-3604	'D' Steam Line MSIV's and Outboard Drain Valve Leak Rate Test and Inboard MSIV Inleakage Test	011
STP-208-3606	Inleakage Testing of Division II Main Steam System Valves Sealed by MS-PLCS	003
STP-309-0203	Division III Diesel Generator Operability Test	323

## Work Orders (WOs)

WO 00406813	WO 00407315	WO 52477718	WO 52499053	WO 52535042
WO 52535643	WO 52535644	WO 52535723	WO 52535724	

## **Section 2RS1: Radiological Hazard Assessment and Exposure Controls**

### Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
QS-2014-RBS-002	River Bend Station Quality Assurance Surveillance Report	February 20, 2014
O2C-RBS-2014-0168	Second Nuclear Oversight Follow-up Surveillance of a Quality Assurance Finding	May 8, 2014

### Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
S-CRB-25177	Quality Assurance Audit Report	September 9, 2013 – December 3, 2013

### Condition Reports (CRs)

CR-RBS-2014-02411	CR-RBS-2014-04047	CR-RBS-2014-04049	CR-RBS-2014-04150
CR-RBS-2014-04350	CR-RBS-2014-04377	CR-RBS-2014-04544	CR-RBS-2014-04545
CR-RBS-2014-04559	CR-RBS-2014-04690	CR-RBS-2014-04801	CR-RBS-2014-04834
CR-RBS-2014-04958	CR-RBS-2014-04969	CR-RBS-2014-04995	CR-RBS-2014-05377
CR-RBS-2014-05437	CR-RBS-2014-06021	CR-RBS-2014-06118	CR-RBS-2014-06125
CR-RBS-2014-06249	CR-RBS-2014-06287	CR-RBS-2014-06349	CR-RBS-2014-06504
CR-RBS-2014-06507	CR-RBS-2014-06571	CR-RBS-2014-06632	CR-RBS-2015-00247
CR-RBS-2015-00453	CR-RBS-2015-00627	CR-RBS-2015-00955	CR-RBS-2015-01325

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-RP-121	Radioactive Material Control	9
RPP-0006	Performance of Radiological Surveys	22
RPP-0005	Management of Radiological Postings	29
RBNP-024	Radiation Protection Plan	302
EN-RP-204	Special Monitoring Requirements	6
EN-RP-105	Radiological Work Permits	14
EN-RP-152	Conduct of Radiation Protection	0
EN-RP-143	Source Control	10
EN-RP-108	Radiation Protection Posting	14
EN-RP-106-01	Radiological Survey Guidelines	1
EN-RP-102	Radiological Control	4
EN-RP-101	Access Control for RCAs	10
EN-RP-131	Air Sampling	13

### Radiation Survey Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
RBS-1502-0723	6103 AB 95' RHR B	February 25, 2015
RBS-1502-0999	6103 AB 95' RHR B	February 28, 2015
RBS-AS-2015-00286	82' Under Vessel	March 2, 2015

### Radiation Survey Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
RBS-AS-2015-00220	Drywell Under Vessel	February 28, 2015
RBS-AS-2015-00168	RHR B	February 28, 2015
RBS-AS-2015-00167	RHR B	February 27, 2015
RBS-AS-2015-00015	RB 186' Cavity	February 23, 2015
RBS-AS-2015-00031	RB 186' Cavity	February 28, 2015
RBS-1408-0212	D Tunnel Pipe Chase	August 21, 2014
RBS-1408-0133	D Tunnel Pipe Chase	August 13, 2014

### Radiation Work Permits

<u>Number</u>	<u>Title</u>	<u>Revision</u>
20151426	MOV Activities, except Drywell	1
20151437	Low Risk Eddy Current Testing/RHR HX Activities	0
20151917	Drywell Under Vessel Activities	1
20151800	RF-18 Refuel Floor Activities	6

### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	Pool Material Inventory Report Post RF17	June 11, 2013
WO-52551895	Source Inventory	September 2014
52551895-01	Sealed Source Leak Test	October 1, 2014
WO-52518640	Source Inventory	March 2014
52518640-01	Sealed Source Leak Test	April 2, 2014
WO-234831-23	RHR HX Wastewater Hoses Removal	March 5, 2015

## **Section 2RS2: Occupational ALARA Planning and Controls**

### Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
QA-14/15-2013-RBS-1	Quality Assurance Audit Report: Radiation Protection/Radwaste	December 3, 2013
QS-2014-RBS-002	River Bend Station Quality Assurance Surveillance Report	February 20, 2014



### Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
O2C-RBS-2014-0168	Second Nuclear Oversight Follow-up Surveillance of a Quality Assurance Finding	May 8, 2014

### Condition Reports (CRs)

CR-HQN-2014-00665	CR-RBS-2013-01181	CR-RBS-2013-01986	CR-RBS-2013-03426
CR-RBS-2013-04717	CR-RBS-2013-05638	CR-RBS-2014-01595	CR-RBS-2014-01701
CR-RBS-2014-03182	CR-RBS-2014-05324	CR-RBS-2014-06121	CR-RBS-2015-01164
CR-RBS-2015-01382	CR-RBS-2015-01412	CR-RBS-2015-01529	CR-RBS-2015-01549
CR-RBS-2015-01587			

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
ADM-0046	Temporary Shielding Control Program	10
ADM-0101	Source Term Reduction and Control	00
EN-RP-100	Radiation Worker Expectations	9
EN-RP-105	Radiological Work Permits	14
EN-RP-110	ALARA Program	12
EN-RP-110-03	Collective Radiation Exposure (CRE) Reduction Guidelines	3
EN-RP-110-04	Radiation Protection Risk Assessment Process	5
EN-RP-110-05	ALARA Planning and Controls	2
EN-RP-110-06	Outage Dose Estimating and Tracking	1

### Radiation Work Permits

<u>Number</u>	<u>Title</u>	<u>Revision</u>
2014-1001	Low Risk Radiation Protection Activities	03
2014-1002	Low Risk Operations Activities	02
2014-1004	Low Risk Maintenance Activities	02
2014-1012	Low Risk Emergent Work including all Support Activities	03
2014-1020	Low Risk Pre-Outage Preps including all Support Activities	06
2014-1204	High Risk Investigations, Surveillance and Maintenance Activities	03
2015-1800	RF-18 Refuel Floor Activities	00

#### Radiation Work Permits

<u>Number</u>	<u>Title</u>	<u>Revision</u>
2015-1953	RF-18 Bio-Shield Activities	02

#### Radiation Survey Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
RBS-1302-0732	9000 Drywell '82	February 22, 2013
RBS-1502-0387	4101 Radwaste 106' Liner Bay	February 21, 2015
RBS-1503-0167	9000 Drywell '82	March 3, 2015
RBS-1503-0267	4100 Radwaste 106'	March 3, 2015

#### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
RF 18 150 500 42	TEDE-ALARA Evaluation	January 12, 2015
RF 18 150 500 62	TEDE-ALARA Evaluation	January 12, 2015
RF 18 150 500 122	TEDE-ALARA Evaluation	January 12, 2015
RF 18 150 500 302	TEDE-ALARA Evaluation	January 12, 2015
DW-002	Temporary Shielding Request: 'B' Recirc Discharge Vertical Piping/Drywell EL 95' to 110'	February 26, 2015

#### **Section 4OA1: Performance Indicator Verification**

##### Condition Reports (CRs)

CR-RBS-2013-02426   CR-RBS-2013-04083   CR-RBS-2014-04020

<u>Miscellaneous Documents</u>	<u>Date</u>
NRC Performance Indicators – 1 <sup>st</sup> Quarter	2014
NRC Performance Indicators – 2 <sup>nd</sup> Quarter	2014
NRC Performance Indicators – 3 <sup>rd</sup> Quarter	2014
NRC Performance Indicators – 4 <sup>th</sup> Quarter	2014

##### Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-LI-114	Performance Indicator Process	6

## Section 4OA2: Problem Identification and Resolution

### Condition Reports

CR-RBS-2014-05130	CR-RBS-2014-05182	CR-RBS-2014-05191	CR-RBS-2014-05194
CR-RBS-2014-05200	CR-RBS-2014-05209	CR-RBS-2014-05211	CR-RBS-2014-05256
CR-RBS-2014-05258	CR-RBS-2014-05294	CR-RBS-2015-00439	CR-RBS-2015-00446

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-OP-111, Attachment 9.2	Operational Decision-Making Issue (ODMI) Process - Intermittent Failure of Turbine Steam Flow Reference Signal, Dated 10/19/2014	11
GOP-0003	Scram Recovery	024

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

### Condition Reports

CR-RBS-2014-05130	CR-RBS-2014-05182	CR-RBS-2014-05191	CR-RBS-2014-05194
CR-RBS-2014-05200	CR-RBS-2014-05209	CR-RBS-2014-05211	CR-RBS-2014-05256
CR-RBS-2014-05258	CR-RBS-2014-05294		

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-OP-111, Attachment 9.2	Operational Decision-Making Issue (ODMI) Process - Intermittent Failure of Turbine Steam Flow Reference Signal, Dated 10/19/2014	11
GOP-0003	Scram Recovery	024

**The following items are requested for the  
Occupational Radiation Safety Inspection  
at River Bend Station  
(March 2 – 6, 2015)  
Integrated Report 2015001**

Inspection areas are listed in the attachments below.

Please provide the requested information on or before **February 16, 2015**.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.01 should be in a file/folder titled "1- A," applicable organization charts in file/folder "1- B," etc.

If information is placed on *ims.certrec.com*, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact the lead inspector, Natasha Greene, at (817) 200-1154 or [Natasha.Greene@nrc.gov](mailto:Natasha.Greene@nrc.gov).

Currently, the other inspector will be Pete Hernandez [(817) 200-1168 or [Pete.Hernandez@nrc.gov](mailto:Pete.Hernandez@nrc.gov)].

**PAPERWORK REDUCTION ACT STATEMENT**

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

**1. Radiological Hazard Assessment and Exposure Controls (71124.01)**

Date of Last Inspection: August 11, 2014

- A. List of contacts (with official title) and telephone numbers for the Radiation Protection Organization Staff and Technicians
- B. Applicable organization charts
- C. Audits, self-assessments, and LERs written since date of last inspection, related to this inspection area
- D. Procedure indexes for the radiation protection procedures
- E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
  - 1. Radiation Protection Program Description
  - 2. Radiation Protection Conduct of Operations
  - 3. Personnel Dosimetry Program
  - 4. Posting of Radiological Areas
  - 5. High Radiation Area Controls
  - 6. RCA Access Controls and Radworker Instructions
  - 7. Conduct of Radiological Surveys
  - 8. Radioactive Source Inventory and Control
  - 9. Declared Pregnant Worker Program
- F. List of corrective action documents (including corporate and subtiered systems) since date of last inspection
  - a. Initiated by the radiation protection organization
  - b. Assigned to the radiation protection organization
  - c. Identify any CRs that are potentially related to a performance indicator event

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable" so that the inspector can perform word searches.

If not covered above, a summary of corrective action documents since date of last inspection involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with IP 71151)

- G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity)
- H. List of active radiation work permits
- I. Radioactive source inventory list

**2. Occupational ALARA Planning and Controls (71124.02)**

Date of Last Inspection: January 13, 2014

- A. List of contacts (with official title) and telephone numbers for ALARA program personnel
- B. Applicable organization charts
- C. Copies of audits, self-assessments, and LERs, written since date of last inspection, focusing on ALARA
- D. Procedure index for ALARA Program
- E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
  - 1. ALARA Program
  - 2. ALARA Committee
  - 3. Radiation Work Permit Preparation
- F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the ALARA program. In addition to ALARA, the summary should also address Radiation Work Permit violations, Electronic Dosimeter Alarms, and RWP Dose Estimates.

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

- G. List of work activities greater than 1 rem, since date of last inspection. Include original dose estimate and actual dose.
- H. Site dose totals and 3-year rolling averages for the past 3 years (based on dose of record)
- I. Outline of source term reduction strategy