



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION IV  
1600 E. LAMAR BLVD.  
ARLINGTON, TX 76011-4511

July 29, 2016

Mr. William F. Maguire  
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 05000458/2016002 AND 07200049/2016001**

Dear Mr. Maguire:

On June 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your River Bend Station, Unit 1. On July 18, 2016, 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. All of these findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations consistent with Section 2.3.2.a of the NRC Enforcement Policy.

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

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 0001; with copies 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

W. Maguire

- 2 -

Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Gregory G. Warnick, Chief  
Project Branch C  
Division of Reactor Projects

Docket Nos. 50-458, 72-049  
License Nos. NPF-47

Enclosure:

Inspection Report 05000458/2016002 and  
07200049/2016001

w/ Attachments:

- 1) Supplemental Information
- 2) Request for Information for the Occupational  
Radiation Safety Inspection

W. Maguire

- 2 -

Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Gregory G. Warnick, Chief  
Project Branch C  
Division of Reactor Projects

Docket Nos. 50-458, 72-049  
License Nos. NPF-47

Enclosure:  
Inspection Report 05000458/2016002  
and 07200049/2016001  
w/ Attachments:  
1) Supplemental Information  
2) Request for Information for the Occupational  
Radiation Safety Inspection

DISTRIBUTION:  
See next page

ADAMS ACCESSION NUMBER: ML16211A189

<input checked="" type="checkbox"/> SUNSI Review By: GWarnick	ADAMS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive	<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available			
OFFICE	SRI:DRP/C	ARI:DRP/C	SPE:DRP/C	C:DRS/EB1	C:DRS/EB2	C:DRS/OB	C:DRS/PSB2
NAME	JSowa	BParks	CYoung	TFarnholtz	GWerner	VGaddy	HGepford
SIGNATURE	<i>/RA/</i>	<i>/RA/</i>	<i>/RA/</i>	<i>/RA/</i>	<i>/RA/</i>	<i>/RA/</i>	<i>/RA/</i>
DATE	07/19/2016	07/21/2016	7/26/2016	07/25/2016	07/21/2016	07/19/2016	07/19/2016
OFFICE	TL:IPAT	BC:FCDB	BC:DRP/C				
NAME	THipschman	JWhitten	GWarnick				
SIGNATURE	<i>/RA/HAF for</i>	<i>/RA/</i>	<i>/RA/</i>				
DATE	07/19/2016	07/26/2016	07/27/2016				

OFFICIAL RECORD COPY

Letter to William F. Maguire from Gregory G. Warnick, dated July 29, 2016

SUBJECT: RIVER BEND STATION – NRC INTEGRATED INSPECTION  
REPORT 05000458/2016002

DISTRIBUTION:

Regional Administrator (Kriss.Kennedy@nrc.gov)  
Deputy Regional Administrator (Scott.Morris@nrc.gov)  
DRP Director (Troy.Pruett@nrc.gov)  
DRP Deputy Director (Ryan.Lantz@nrc.gov)  
DRS Director (Anton.Vegel@nrc.gov)  
DRS Deputy Director (Jeff.Clark@nrc.gov)  
Senior Resident Inspector (Jeffrey.Sowa@nrc.gov)  
Resident Inspector (Brian.Parks@nrc.gov)  
RBS Administrative Assistant (Lisa.Day@nrc.gov)  
Branch Chief, DRP/C (Greg.Warnick@nrc.gov)  
Senior Project Engineer (Cale.Young@nrc.gov)  
Project Engineer (Michael.Stafford@nrc.gov)  
Project Engineer (Lindsay.Brandt@nrc.gov)  
Branch Chiefs, DRP (R4DRP-BC@nrc.gov)  
Branch Chiefs, DRS (R4DRS-BC@nrc.gov)  
Public Affairs Officer (Victor.Dricks@nrc.gov)  
Project Manager (Stephen.Koenick@nrc.gov)  
Team Leader, DRS/TSS (Thomas.Hipschman@nrc.gov)  
DNMS Director (Mark.Shaffer@nrc.gov)  
DNMS Deputy Director (Linda.Howell@nrc.gov)  
FCDB Branch Chief (Jack.Whitten@nrc.gov)  
FCDB Senior Inspector (Lee.Brookhart@nrc.gov)  
FCDB Inspector (Eric.Simpson@nrc.gov)  
FCDB Senior Health Physicist (Rachel.Browder@nrc.gov)  
Project Manager, DSFM (William.Allen@nrc.gov)  
RITS Coordinator (Marisa.Herrera@nrc.gov)  
ACES (R4Enforcement.Resource@nrc.gov)  
Regional Counsel (Karla.Fuller@nrc.gov)  
Technical Support Assistant (Loretta.Williams@nrc.gov)  
Congressional Affairs Officer (Jenny.Weil@nrc.gov)  
RIV Congressional Affairs Officer (Angel.Moreno@nrc.gov)  
RIV/ETA: OEDO (Jeremy.Bowen@nrc.gov)  
RIV RSLO (Bill.Maier@nrc.gov)  
ROPreports.Resource@nrc.gov  
ROPAssessment.Resource@nrc.gov

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 05000458 and 07200049

License: NPF-47

Report: 05000458/2016002 and 07200049/2016001

Licensee: Entergy Operations, Inc.

Facility: River Bend Station

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

Dates: April 1 through June 30, 2016

Inspectors: J. Sowa, Senior Resident Inspector  
B. Parks, Acting Resident Inspector  
F. Ramirez, Senior Resident Inspector  
M. Phalen, Senior Health Physicist  
P. Hernandez, Health Physicist  
L. Brookhart, Senior ISFSI Inspector, FCDB

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

## SUMMARY

IR 05000458/2016002, IR 07200049/2016001; 04/01/2016 – 06/30/2016; River Bend Station; Fire Protection; Problem Identification and Resolution

The inspection activities described in this report were performed between April 1 and June 30, 2016, by the resident inspectors at River Bend Station and inspectors from the NRC's Region IV office and other NRC offices. Three findings of very low safety significance (Green) are documented in this report. All of these findings involved violations of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using NRC Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

### Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, for the licensee's failure to follow station maintenance procedures related to the use of temporary power cables and storage of transient combustible materials in the auxiliary building. Specifically, the licensee installed energized networking equipment and an associated power cable within one foot of a safety-related cable tray. The station did not initially correct the problem, but later resolved the deficiencies by removing the networking equipment and power cable. The failure to initially correct the issue is documented as a violation in Section 4OA2 of this report. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2016-02398.

The licensee's installation of energized networking equipment and an associated power cable within one foot of a safety-related cable tray was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it affected the protection against external factors attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a fire resulting from this energized equipment would impact the availability, reliability, and capability of the low pressure core spray system, residual heat removal system, component cooling primary system, and reactor core isolation cooling system. The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings." Since the finding involved a failure to adequately implement fire prevention and administrative controls for transient combustibles, the inspectors dispositioned the finding using NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." In accordance with Manual Chapter 0609, Appendix F, Question 1.3.1.A, the inspectors determined that the finding was of very low safety significance (Green) because the reactor would be able to reach and maintain safe shutdown since the safe shutdown path was deemed independent of fire damage state scenarios for the given fire ignition source. The finding had a cross-cutting aspect in the area of human performance, work management, because the licensee's work management processes failed to plan, control, and execute the work activity that included installation of temporary equipment such that impacts on nuclear safety were properly evaluated and addressed [H.5]. (Section 1R05)

- Green. The inspectors identified a non-cited violation of Technical Specification 3.8.1, “AC Sources – Operating,” for the licensee’s failure to take required actions for an inoperable emergency diesel generator. Specifically, after classifying the Division I emergency diesel generator as inoperable on the basis of a nonconforming condition discovered during an extended maintenance outage, and after failing to either verify that the Division II emergency diesel generator was not inoperable due to common cause failure within 24 hours or conduct a surveillance run on the Division II emergency diesel generator within 24 hours, the licensee failed to enter Mode 3 within 12 hours, as required by Actions C.3.1, C.3.2, and G.1 of Technical Specification 3.8.1, respectively. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2016-03978. Corrective actions included the scheduling of training to ensure that operations personnel fully understand the technical specification requirements for common cause evaluation as they relate to adverse conditions on emergency diesel generators.

The failure to take required actions for an inoperable emergency diesel generator was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment reliability attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to follow technical specification requirements to ensure the availability, reliability, and capability of the operable emergency diesel generator directly affected the cornerstone objective. Using NRC Inspection Manual Chapter 0609, “Significance Determination Process,” Appendix A, “Exhibit 2 -- Mitigating Systems Screening Questions,” the inspectors determined the finding to be of very low safety significance (Green) because the finding did not represent an actual loss of function of the Division II emergency diesel generator. The finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee failed to use a consistent, systematic approach to make decisions. Specifically, the licensee failed to review the required actions of the applicable technical specification so as to ensure that all of those actions would be properly carried out [H.13]. (Section 4OA2.2)

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to promptly identify and correct a condition adverse to quality. Specifically, after writing a condition report identifying energized networking equipment and an associated power cable that had been installed within one foot of a safety-related cable tray, the licensee closed the condition report without removing the networking equipment and power cable. The licensee entered this issue into their corrective action program as Condition Reports CR-RBS-2016-02398 and CR-RBS-2016-03152. Corrective actions included removing the networking equipment and power cable and conducting a performance management review of the actions involved with correcting the condition and closing the condition report.

The licensee’s failure to promptly identify and correct a condition adverse to quality was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it affected the human performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to correct a known deficient condition resulted in an extended period of vulnerability to a fire that could result from improperly installed energized

equipment and challenge the availability, reliability, and capability of the low pressure core spray system, residual heat removal system, component cooling primary system, and reactor core isolation cooling system.

The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings." Since the finding involved a failure to adequately implement fire prevention and administrative controls for transient combustibles, the inspectors dispositioned the finding using NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." In accordance with Manual Chapter 0609, Appendix F, Question 1.3.1.A, the inspectors determined that the finding was of very low safety significance (Green) because the reactor would be able to reach and maintain safe shutdown since the safe shutdown path was deemed independent of fire damage state scenarios for the given fire ignition source. The finding had a cross-cutting aspect in the area of human performance, teamwork, because the licensee failed to properly communicate expectations to individuals performing work during the course of implementing corrective actions [H.4]. (Section 4OA2.3)



## PLANT STATUS

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

- On April 7, 2016, the station reduced power to 67 percent to conduct suppression testing to identify and suppress a leaking fuel assembly. The station returned the unit to 100 percent power on April 9, 2016.
- On June 11, 2016, the station conducted a shutdown in order to diagnose and replace leaking fuel assemblies. The station returned the unit to 100 percent power on June 28, 2016.

## REPORT DETAILS

### 1. REACTOR SAFETY

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

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Summer Readiness for Offsite and Alternate AC Power Systems

###### a. Inspection Scope

On June 6, 2016, the inspectors completed an inspection of the station's offsite and alternate-ac power systems. The inspectors inspected the material condition of these systems, including transformers and other switchyard equipment, to verify that plant features and procedures were appropriate for operation and continued availability of offsite and alternate-ac power systems. The inspectors reviewed outstanding work orders and open condition reports (CRs) for these systems. The inspectors walked down the switchyard to observe the material condition of equipment providing offsite power sources. The inspectors verified that the licensee's procedures included appropriate measures to monitor and maintain availability and reliability of the offsite and alternate-ac power systems.

These activities constitute one sample of summer readiness of offsite and alternate-ac power systems, as defined in Inspection Procedure 71111.01.

###### b. Findings

No findings were identified.

##### .2 Readiness for Impending Adverse Weather Conditions

###### a. Inspection Scope

On June 3, 2016, the inspectors completed an inspection of the station's readiness for impending adverse weather conditions. The inspectors reviewed plant design features, the licensee's procedures to respond to tornadoes and high winds, and the licensee's planned implementation of these procedures. The inspectors evaluated operator staffing

and accessibility of controls and indications for those systems required to control the plant.

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

b. Findings

No findings were identified.

**1R04 Equipment Alignment (71111.04)**

Partial Walkdown

a. Inspection Scope

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

- April 14, 2016, high pressure core spray while the reactor core isolation cooling system was out of service for maintenance
- April 14, 2016, control rod drive hydraulics
- April 21, 2016, Division II standby service water

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 constitute three partial system walkdown samples, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

**1R05 Fire Protection (71111.05)**

.1 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 six plant areas important to safety:

- April 22, 2016, auxiliary building, low pressure core spray pump room, fire area AB-6/Z-2

- April 25, 2016, control building, Division II control building chiller room, fire area C-13E
- May 19, 2016, auxiliary building, standby gas treatment B room, fire area AB-13
- May 27, 2016, diesel generator building, diesel generator A room, fire area DG-6/Z-1
- May 27, 2016, reactor building, hydraulic control unit area east, fire area RC-3/Z-3
- May 27, 2016, reactor building, hydraulic control unit area west, fire area RC-4/Z-3

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 constitute six quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

Introduction. The inspectors identified a Green, non-cited violation of Technical Specification (TS) 5.4.1.a, for the licensee's failure to follow station maintenance procedures related to the use of temporary power cables and storage of transient combustible materials in the auxiliary building. Specifically, the licensee installed energized networking equipment and an associated power cable within one foot of a safety-related cable tray. The station did not initially correct the problem, but later resolved the deficiencies by removing the networking equipment and power cable. The failure to initially correct the issue is documented as a violation in Section 4OA2 of this report. The licensee entered this issue into their corrective action program (CAP) as Condition Report CR-RBS-2016-02398.

Description. On March 18, 2016, the inspectors discovered energized electronic networking equipment secured with tie wraps to safety-related cable tray 1TX808R in the low pressure core spray pump hatch room on the 95-foot elevation of the auxiliary building (fire area AB-6, zone 2). The inspectors also observed a temporary power cable supplying power to the networking equipment situated inside of safety-related cable tray 1TX808R. The inspectors evaluated the cables in the cable tray and determined that 55 Division I safety-related cables were routed through this tray. These cables supply power to components associated with the low pressure core spray system, residual heat removal system, component cooling primary system, reactor core isolation cooling system, and leak detection system. Of these 55 cables, 25 supply power to components designated as necessary for safe shutdown of the plant. These components would be adversely affected in the event of a fire from the energized equipment. The inspectors immediately notified control room personnel. The licensee wrote Condition Report CR-RBS-2016-02398 and ultimately corrected the condition by removing the networking equipment and power cable.

The inspectors reviewed station Procedure ADM-0073, "Temporary Services and Equipment," Revision 307. Procedure ADM-0073, Step 8.2.3, requires temporary electrical cords less than 240 volts to have a minimum clearance of one foot from permanent cables and conduits. Additionally, the inspectors reviewed Procedure EN-DC-161, "Control of Combustibles," Revision 13, and noted that Step 5.2[4] stated: "Transient combustible materials should be located in designated storage areas or arranged so as to minimize the fire hazard to cable trays and plant equipment. Do NOT place combustible materials directly under or over cable trays."

River Bend Station Updated Safety Analysis Report, Section 9A.2.5.1.7.2, states the major contributor to fire severity for fire area AB-6 is cable insulation. The networking equipment and energized power cable were secured to and in direct contact with the insulated safety-related cables in cable tray 1TX808R. The equipment was installed on February 20, 2015.

Analysis. The licensee's installation of energized networking equipment and an associated power cable within one foot of a safety-related cable tray was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it affected the protection against external factors attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a fire resulting from this energized equipment would impact the availability, reliability, and capability of the low pressure core spray system, residual heat removal system, component cooling primary system, and reactor core isolation cooling system.

The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings." Since the finding involved a failure to adequately implement fire prevention and administrative controls for transient combustibles, the inspectors dispositioned the finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." In accordance with Manual Chapter 0609, Appendix F, Question 1.3.1.A, the inspectors determined that the finding was of very low safety significance (Green) because the reactor would be able to reach and maintain safe shutdown since the safe shutdown path was deemed independent of fire damage state scenarios for the given fire ignition source. The finding had a cross-cutting aspect in the area of human performance, work management, because the licensee's work management processes failed to plan, control, and execute the work activity that included installation of temporary equipment such that impacts on nuclear safety were properly evaluated and addressed [H.5].

Enforcement. Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2. Section 9.a of Appendix A to Regulatory Guide 1.33, Revision 2, requires procedures for performing maintenance. The licensee established Procedure ADM-0073, "Temporary Services and Equipment," Revision 307, to meet the Regulatory Guide 1.33 requirement. Procedure ADM-0073, "Temporary Services and Equipment," Revision 307, Step 8.2.3, requires temporary electrical cables less than 240 volts to have a minimum clearance of one foot from permanent cables and conduits. Contrary to the above, from February 20, 2015, to April 25, 2016, the licensee did not implement the maintenance procedure requirement

that temporary electrical cables less than 240 volts have a minimum clearance of one foot from permanent cables and conduits. Specifically, the licensee mounted energized networking equipment and a temporary power cable directly to safety-related cable tray 1TX808R. As a result, the licensee introduced an ignition source that increased the frequency of a fire that could adversely impact safety-related equipment. The licensee entered this condition into their CAP as Condition Report CR-RBS-2016-02398. The licensee restored compliance by removing the networking equipment and temporary power cable. Because this finding is of very low safety significance and was entered into the licensee's CAP as Condition Report CR-RBS-2016-03152, this violation is being treated as a non-cited violation consistent with Section 2.3.2.a of the Enforcement Policy: NCV 05000458/2016002-01, "Failure to Follow Station Guidance on Use of Temporary Power Cables and Control of Transient Combustibles."

.2 Annual Inspection

a. Inspection Scope

This evaluation included observation of an unannounced fire drill for training on April 27, 2016.

During this drill, the inspectors evaluated the capability of the fire brigade members, the leadership ability of the brigade leader, the brigade's use of turnout gear and fire-fighting equipment, and the effectiveness of the fire brigade's team operation. The inspectors also reviewed whether the licensee's fire brigade met NRC requirements for training, dedicated size and membership, and equipment.

These activities constitute one annual inspection sample, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

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

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On May 4, 2016, the inspectors observed a portion of an annual requalification test for licensed operators. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the requalification activities.

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

b. Findings

No findings were identified.

## .2 Review of Licensed Operator Performance

### a. Inspection Scope

On April 7, 2016, 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 suppression testing.

In addition, the inspectors assessed the operators' adherence to plant procedures, including the conduct of operations procedures 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 reviewed two instances of degraded performance or condition of safety-related structures, systems, and components (SSCs):

- April 15, 2016, primary containment isolation system, functional failure review
- June 11, 2016, reactor recirculation pump B, failure to downshift to slow speed during plant shutdown

The inspectors reviewed the extent of condition of possible common cause SSC 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 SSCs. 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 constitute completion of two 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:

- April 5, 2016, green risk associated with the inability to remotely operate breaker YCB-OCB-20610, Division I reserve station service isolation from the south offsite power bus
- April 11, 2016, green risk condition while reactor core isolation cooling pump was out of service for maintenance
- April 13, 2016, yellow risk condition while reactor core isolation cooling pump was out of service for maintenance concurrent with planned maintenance on Division II normal service water
- April 18, 2016, yellow risk condition while Division II standby service water was out of service for maintenance concurrent with Division II residual heat removal system out of service
- April 27, 2016, yellow risk condition due to upgrades at Fancy Point switchyard with station blackout diesel generator out of service for maintenance

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 constitute 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 four operability determinations that the licensee performed for degraded or nonconforming SSCs:

- April 5, 2016, operability determination of Division I emergency diesel generator jacket water leak (CR-RBS-2016-02645)
- April 11, 2016, operability determination of failed low pressure core spray pump line fill pressure indicator (CR-RBS-2016-02672)

- May 31, 2016, operability determination of Division III emergency diesel generator air start system air compressor degraded oil (CR-RBS-2016-02306)
- June 2, 2016, operability determination of control building chiller HVK-1B low compressor oil (CR-RBS-2016-02976)

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC 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 SSC.

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

b. Findings

No findings were identified.

**1R18 Plant Modifications (71111.18)**

a. Inspection Scope

On June 30, 2016, the inspectors reviewed a temporary modification to replace the variseals associated with the feedwater regulating valves with a replacement O-ring.

The inspectors verified that the licensee had installed this temporary modification in accordance with technically adequate design documents. The inspectors verified that this modification did not adversely impact the operability or availability of affected SSCs. The inspectors reviewed design documentation and plant procedures affected by the modification to verify the licensee maintained configuration control.

These activities constitute completion of one sample of temporary modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed six post-maintenance testing activities that affected risk-significant SSCs:

- April 8, 2016, work order (WO) 00440426, "Division I Alternate Depressurization System (ADS) Trip Unit B21-ESN670E Repair," following spurious tripping and resetting of the trip unit



- April 28, 2016, WO 00398644, “Reactor Core Isolation Cooling Steam Supply Isolation Valve Reassembly,” following torque arm bearing replacement
- May 10, 2016, WO 00384551, “Small Amount of Leakage at Stuffing Box Gasket Area,” following impeller adjustment on Division I emergency diesel generator fuel oil transfer pump
- May 16, 2016, WO 00429669, “Perform the 36 Month Inspection of the Standby Diesel,” following 3-year maintenance overhaul on Division I emergency diesel generator
- May 19, 2016, WO 00445871, “Post-Maintenance Testing after Installation of TMOD 64705 for EJS-SWG2B-ACB072,” following implementation of temporary modification to standby gas treatment B supply breaker EJS-SWG2B-ACB072
- May 23, 2016, WO 00445913-07, “Post-Maintenance Testing after Installation of TMOD 64709 for EJS-SWG2A-ACB032,” following implementation of temporary modification to standby gas treatment A supply breaker EJS-SWG2A-ACB032

The inspectors reviewed licensing- and design-basis documents for the SSCs 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 SSCs.

These activities constitute 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 maintenance outage that concluded on June 25, 2016, 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
- Review and verification of the licensee’s fatigue management activities
- Monitoring of shutdown and cooldown activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Observation and review of fuel handling activities
- Monitoring of heatup and startup activities

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

b. Findings

No findings were identified.

**1R22 Surveillance Testing (71111.22)**

a. Inspection Scope

The inspectors observed five risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the SSCs were capable of performing their safety functions:

In-service test:

- April 29, 2016, STP-209-6310, "RCIC Quarterly Pump and Valve Operability Test," performed on April 15, 2016

Containment isolation valve surveillance test:

- June 2, 2016, STP-057-3805, "CRD Containment Control Rod Drive Removal Hatch Leak Rate Test," performed on February 23, 2016

Other surveillance tests:

- May 5, 2016, STP-309-0206, "Division I Diesel Generator 184 Operability Test," performed on May 2, 2016
- June 1, 2016, STP-203-1702, "E22-S001 Battery Performance Discharge Test," performed on May 26, 2016
- June 1, 2016, STP-051-4610, "RPS/RHR – Reactor Vessel Steam Dome Pressure-High Channel Functional Test," performed on May 26, 2016

The inspectors verified that these tests met TS 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 SSCs following testing.

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

b. Findings

No findings were identified.

## **Cornerstone: Emergency Preparedness**

### **1EP6 Drill Evaluation (71114.06)**

#### Training Evolution Observation

##### a. Inspection Scope

On April 26, 2016, the inspectors observed simulator-based licensed operator requalification training that included implementation of the licensee's emergency plan. The inspectors verified that the licensee's emergency classifications, offsite notifications, and protective action recommendations were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the evaluators and entered into the CAP for resolution.

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

##### b. Findings

No findings were identified.

## **2. RADIATION SAFETY**

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

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

##### a. Inspection Scope

The inspectors evaluated 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. During the inspection, the inspectors interviewed licensee personnel, walked down various areas in the plant, performed independent radiation dose rate measurements, and observed postings and physical controls. The inspectors reviewed licensee performance in the following areas:

- Radiological hazard assessment, including a review of the plant's radiological source terms and associated radiological hazards. The inspectors also reviewed the licensee's radiological survey program to determine whether radiological hazards were properly identified for routine and non-routine activities and assessed for changes in plant operations.
- Instructions to workers including radiation work permit requirements and restrictions, actions for electronic dosimeter alarms, changing radiological condition, and radioactive material container labeling.
- Contamination and radioactive material control, including release of potentially contaminated material from the radiologically controlled area, radiological survey performance, radiation instrument sensitivities, material control and release criteria, and control and accountability of sealed radioactive sources.

- Radiological hazards control and work coverage. During walkdowns of the facility and job performance observations, the inspectors evaluated ambient radiological conditions, radiological postings, adequacy of radiological controls, radiation protection job coverage, and contamination controls. The inspectors also evaluated dosimetry selection and placement as well as the use of dosimetry in areas with significant dose rate gradients. The inspectors examined the licensee's controls for items stored in the spent fuel pool and evaluated airborne radioactivity controls and monitoring.
- High radiation area and very high radiation area controls. During plant walkdowns, the inspectors verified the adequacy of posting and physical controls, including areas of the plant with the potential to become risk-significant high radiation areas.
- Radiation worker performance and radiation protection technician proficiency with respect to radiation protection work requirements. The inspectors determined if workers were aware of significant radiological conditions in their workplace, radiation work permit controls/limits in place, and electronic dosimeter dose and dose rate set points. The inspectors observed radiation protection technician job performance, including the performance of radiation surveys.
- Problem identification and resolution for radiological hazard assessment and exposure controls. The inspectors reviewed audits, self-assessments, and CAP documents to verify problems were being identified and properly addressed for resolution.

These activities constitute completion of the seven required samples of radiological hazard assessment and exposure control program, as defined in Inspection Procedure 71124.01.

b. Findings

No findings were identified.

**2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)**

a. Inspection Scope

The inspectors evaluated whether the licensee controlled in-plant airborne radioactivity concentrations consistent with ALARA principles and that the use of respiratory protection devices did not pose an undue risk to the wearer. During the inspection, the inspectors interviewed licensee personnel, walked down various areas in the plant, and reviewed licensee performance in the following areas:

- Engineering controls, including the use of permanent and temporary ventilation systems to control airborne radioactivity. The inspectors evaluated installed ventilation systems, including review of procedural guidance, verification the systems were used during high-risk activities, and verification of airflow capacity, flow path, and filter/charcoal unit efficiencies. The inspectors also reviewed the use of temporary ventilation systems used to support work in contaminated areas such as high efficiency particulate air (HEPA)/charcoal negative pressure units.

Additionally, the inspectors evaluated the licensee's airborne monitoring protocols, including verification that alarms and set points were appropriate.

- Use of respiratory protection devices, including an evaluation of the licensee's respiratory protection program for use, storage, maintenance, and quality assurance of National Institute for Occupational Safety and Health (NIOSH) certified equipment, air quality and quantity for supplied-air devices and self-contained breathing apparatus (SCBA) bottles, qualification and training of personnel, and user performance.
- Self-contained breathing apparatus for emergency use, including the licensee's capability for refilling and transporting SCBA air bottles to and from the control room and operations support center during emergency conditions, hydrostatic testing of SCBA bottles, status of SCBA staged and ready for use in the plant including vision correction, mask sizes, etc., SCBA surveillance and maintenance records, and personnel qualification, training, and readiness.
- Problem identification and resolution for airborne radioactivity control and mitigation. The inspectors reviewed audits, self-assessments, and corrective action documents to verify problems were being identified and properly addressed for resolution.

These activities constitute completion of the four required samples of in-plant airborne radioactivity control and mitigation program, as defined in Inspection Procedure 71124.03.

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 Safety System Functional Failures (MS05)

a. Inspection Scope

For the period of April 2015 through March 2016, the inspectors reviewed licensee event reports (LERs), maintenance rule evaluations, and other records that could indicate whether safety system functional failures had occurred. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, and NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73," Revision 3, to determine the accuracy of the data reported.

These activities constitute verification of the safety system functional failures performance indicator for Unit 1, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: Emergency AC Power Systems (MS06)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of April 2015 through March 2016 to verify the accuracy and completeness of the reported 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 reported data.

These activities constitute verification of the mitigating system performance index for emergency ac power systems for Unit 1, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index: High Pressure Injection Systems (MS07)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of April 2015 through March 2016 to verify the accuracy and completeness of the reported 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 reported data.

These activities constitute verification of the mitigating system performance index for high pressure injection systems for Unit 1, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors verified that there were no unplanned exposures or losses of radiological control over locked high radiation areas and very high radiation areas during the period of January 2015 through March 2016. The inspectors reviewed a sample of radiologically controlled area exit transactions showing exposures greater than 100 millirem. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constitute 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 verified that there were no liquid or gaseous effluent releases that occurred during the period of January 2015 through March 2016. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constitute 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 CAP 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 CAP for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors reviewed the licensee's CAP, performance indicators, system health reports, and other documentation to identify trends that might indicate the existence of a more significant safety issue. To verify that the licensee was taking corrective actions to

address adverse trends that might indicate the existence of a more significant safety issue, the inspectors reviewed CAP documentation associated with the following adverse trend:

- From January 1, 2015, to December 31, 2015, the licensee experienced an increase in consequential events driven by inadequate procedure adherence. This adverse trend continued through the second quarter of 2016.

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

b. Observations and Assessments

The inspectors' review produced the following observations and assessments:

- The inspectors observed that the negative trend in procedure adherence continued into the 6-month period from January 1, 2016, to June 30, 2016. Specifically, three instances of an inadequate procedure adherence that resulted in a consequential event were observed during the period.
  - January 10, 2016: While installing a jumper to bypass the 135 psig isolations for the residual heat removal system, operations personnel failed to follow procedure and use a jumper with a retractable sheath. Operations personnel subsequently caused a ground that led to a loss of shutdown cooling (CR-RBS-2016-00210). The finding associated with this performance deficiency is discussed in Section 2.11.a of Special Inspection Report 0500458/2016009 (ML16133A174).
  - January 29, 2016: During testing of relaying associated with the offsite power line to Division I offsite power, an unanticipated relay actuation occurred resulting in a loss of Division I offsite power and an actuation of the Division I emergency diesel generator. The actuation was determined to be due, in part, to a failure to appropriately use required procedures and drawings during the maintenance (CR-RBS-2016-01027). This event is described in Licensee Event Report 2016-004.
  - May 5, 2016: After classifying the Division I emergency diesel generator as inoperable on the basis of two potentially degraded conditions and one potentially nonconforming condition, the licensee failed to follow the TS requirement to either verify that similar conditions did not exist on the Division II emergency diesel generator or conduct a surveillance run of the Division II emergency diesel generator (CR-RBS-2016-03978).

c. Findings

Introduction. The inspectors identified a Green, non-cited violation of TS 3.8.1, "AC Sources – Operating," for the licensee's failure to take required actions for an inoperable emergency diesel generator (EDG). Specifically, after classifying the Division I EDG as inoperable on the basis of a nonconforming condition discovered during an extended maintenance outage, and after failing to either verify that the Division II EDG was not inoperable due to common cause failure within 24 hours or conduct a surveillance run on the Division II EDG within 24 hours, the licensee failed to enter Mode 3 within 12 hours,



as required by Actions C.3.1, C.3.2, and G.1 of TS 3.8.1, respectively. The licensee entered this issue into their CAP as Condition Report CR-RBS-2016-03978.

Description. On May 5, 2016, with the Division I EDG out of service for an extended maintenance overhaul, the licensee attempted to conduct a scheduled 3-year replacement of the rubber insert on the Division I EDG's governor drive coupling assembly. During attempted installation of the new insert, the licensee discovered that the coupling gap on the assembly, which is the space that the insert fits into, was out of specification. Specifically, the coupling gap was measured to be five-eighths of an inch in length, in comparison with the vendor manual requirement of 1 inch. At that gap length, contortion of the rubber insert was necessary to fit into the reduced space.

At 10:18 p.m. on May 5, 2016, the licensee entered the nonconforming condition associated with the incorrect gap length into the CAP as Condition Report CR-RBS-2016-03516. Approximately 4 hours later, at 2:01 a.m. the next day, the shift manager approved the control room supervisor's determination that the condition rendered the Division I EDG inoperable.

On the evening of May 6, 2016, after discussions with the vendor, the licensee realized that the coupling assembly had been installed incorrectly, with its upper component oriented upside down. When the upper component was reoriented to a correct positioning, the coupling gap increased to 1 inch, consistent with the vendor manual requirement. The licensee was then able to smoothly install the rubber insert into the gap as designed.

The rubber insert joins the upper and lower ends of the governor drive together. If it were to fail, the governor would lose the connection through which it measures engine speed, and therefore the EDG would lose speed control. For this reason, the incorrect installation represented a nonconforming condition with the potential to render the Division I EDG inoperable. Step 5.3.1 of Procedure EN-OP-104, "Operability Determination Process," Revision 10, requires the licensee to evaluate the impact of the nonconforming condition on the specified safety function of the diesel. However, no such evaluation was conducted. Instead, the control room supervisor classified the condition as inoperable without an evaluation since the EDG was already inoperable for the maintenance overhaul.

When a nonconforming condition renders a diesel generator inoperable, Actions C.3.1 and C.3.2 of TS 3.8.1 require the licensee to determine that the other operable EDGs are not inoperable due to common cause failure, or demonstrate the operability of the other EDGs by performing a surveillance run in accordance with surveillance requirement (SR) 3.8.1.2 within 24 hours. If those actions are not completed in the required time frame, TS 3.8.1, Action G.1, requires the licensee to enter Mode 3 within 12 hours.

On May 9, 2016, after reviewing the condition report that documented the nonconforming condition and finding no evidence that a common cause evaluation or a surveillance run had been conducted in accordance with TS requirements, inspectors brought the issue to the attention of the licensee. After looking into the issue, the licensee confirmed that no common cause evaluation or surveillance run on the Division II EDG had been conducted, contrary to TS requirements. At that point, greater than 36 hours had passed since the discovery of the condition and the declaration of inoperability, and therefore the licensee was required to be in Mode 3.

After conferring with the system engineer, the shift manager concluded that the prior crew's declaration of inoperability was overly conservative, and that the nonconforming condition, on its own, did not render the EDG inoperable. The shift manager therefore determined that Actions C.3.1, C.3.2, and G.1 of TS 3.8.1 did not apply.

At the time that the shift manager reached this conclusion, the engineering evaluation necessary to establish a reasonable expectation that the nonconforming EDG was operable, i.e., capable of performing its specified safety function, had not yet been completed. The licensee did not yet have a full understanding of the functions of the governor coupling, or of the impact that installing the rubber insert incorrectly, in a contorted fashion, would have on those functions, particularly in a scenario in which the EDG is called upon to run for seven continuous days at the end of a preventative maintenance cycle, when the insert will have experienced maximum wear and tear. Therefore, the licensee did not have an appropriate basis for nonconservatively reversing the prior crew's declaration and calling the nonconforming EDG operable.

The next day, the licensee completed an engineering evaluation of the condition, which was subsequently revised to address the inspectors' questions. The licensee was ultimately able to demonstrate that the nonconforming EDG would have been able to perform its specified safety function across the spectrum of its design basis. Additionally, in the weeks following the discovery of the nonconforming condition, the licensee inspected the rubber insert installation on the other EDG (Division II), and found it to be conforming.

To assess the extent of the performance deficiency, inspectors reviewed CRs from past EDG outages. Inspectors identified eight additional cases dating back to 2013 in which the licensee declared an already-inoperable EDG inoperable on the basis of a newly-identified adverse condition, without conducting a common cause evaluation of the condition or demonstrating the operability of the other EDGs in a surveillance run, as required by TS. In each of these cases, inspectors noted that there was a reasonable basis for expecting that the EDG would be capable of performing its specified safety function in the presence of the adverse condition, and therefore if an evaluation of the condition had been conducted in accordance with the operability determination procedure, the EDG would have been determined to be operable. Nonetheless, in each case, the licensee declared the EDG inoperable, without carrying out the required TS actions.

Analysis. The failure to take required actions for an inoperable EDG was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment reliability attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to follow technical specification requirements to ensure the availability, reliability, and capability of the operable emergency diesel generator directly affected the cornerstone objective. Using NRC Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Exhibit 2 -- Mitigating Systems Screening Questions," the inspectors determined the finding to be of very low safety significance (Green) because the finding did not represent an actual loss of function of the Division II EDG. The finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee failed to use a consistent, systematic approach to make decisions. Specifically,

the licensee failed to review the required actions of the applicable TS so as to ensure that all of those actions would be properly carried out [H.13].

Enforcement. Technical Specification 3.8.1 requires, in part, that three diesel generators be operable in Modes 1, 2, and 3. For the condition of one EDG inoperable, Action C.3.1 and C.3.2 of TS 3.8.1 require the license to either determine that the operable EDG is not inoperable due to common cause failure within 24 hours, or perform SR 3.8.1.2 on the operable EDG within 24 hours. If these actions are not taken, Action G.1 of TS 3.8.1 requires the licensee to be in Mode 3 within 12 hours. Contrary to the above, from May 7, 2016, to May 9, 2016, after declaring one EDG inoperable on the basis of one potentially nonconforming condition and two potentially degraded conditions, and after failing to either determine that the operable EDG was not inoperable due to common cause failure within 24 hours, or perform SR 3.8.1.2 on the operable EDG within 24 hours, the licensee failed to place the unit in Mode 3 within 12 hours. The licensee restored compliance by demonstrating that the nonconforming condition was insufficient to render the Division I EDG inoperable. Because this finding is of very low safety significance and was entered into the licensee's CAP as Condition Report CR-RBS-2015-03978, this violation is being treated as a non-cited violation consistent with Section 2.3.2.a of the Enforcement Policy: NCV 05000458/2016002-02, "Failure to Conduct Common Cause Failure Evaluation in Response to Inoperable Emergency Diesel Generator."

### .3 Annual Follow-up of Selected Issues

#### a. Inspection Scope

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

- On March 18, 2016, the inspectors discovered energized electronic networking equipment secured with tie wraps to safety-related cable tray 1TX808R in the low pressure core spray pump hatch room on the 95-foot elevation of the auxiliary building. The condition report was closed on March 29, 2016. The closure description stated that the condition report was closed because the condition was corrected. On April 22, 2016, the inspectors observed that energized networking equipment and a temporary power cable were still present in cable tray 1TX808R.

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

#### b. Findings

Introduction. The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to promptly identify and correct a condition adverse to quality. Specifically, after writing a condition report identifying energized networking equipment and an associated power cable that had been installed within one foot of a safety-related cable tray, the licensee closed the condition report without removing the networking equipment and power cable. The licensee entered this issue into their CAP as CRs CR-RBS-2016-02398 and CR-RBS-2016-03152.

Description. On March 18, 2016, the inspectors discovered energized electronic networking equipment secured with tie wraps to safety-related cable tray 1TX808R in the low pressure core spray pump hatch room on the 95-foot elevation of the auxiliary building (fire area AB-6, zone 2). This performance deficiency and associated finding are discussed in Section 1R05 of this report. The inspectors notified control room personnel. The licensee wrote Condition Report CR-RBS-2016-02355 to capture an aggregation of several observations noted by the inspectors on a plant tour that was performed on March 18, 2016. The licensee generated individual CRs for each of these observations on March 23, 2016. The licensee wrote Condition Report CR-RBS-2016-02398 to document the issue with the energized electronic networking equipment and power cable. This condition report was designated as an adverse condition. The condition report was closed on March 29, 2016. The closure description stated that the condition report was closed because the condition was corrected. On April 22, 2016, the inspectors observed that energized networking equipment and a temporary power cable were still present in cable tray 1TX808R despite the statement in Condition Report CR-RBS-2016-02398 that the condition had been corrected. The inspectors presented this information to operations department management, and the licensee wrote Condition Report CR-RBS-2016-03152 and corrected the condition by removing the networking equipment and power cable. Operations management indicated to the inspectors that Condition Report CR-RBS-2016-02398 was initially coded as closed after an operator removed equipment from cable tray 1TX808R different than the equipment identified by the inspectors and identified in CR-RBS-2016-02398.

Analysis. The licensee's failure to promptly identify and correct a condition adverse to quality was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it affected the human performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to correct a known deficient condition resulted in an extended period of vulnerability to a fire that could result from improperly installed energized equipment and challenge the availability, reliability, and capability of the low pressure core spray system, residual heat removal system, component cooling primary system, and reactor core isolation cooling system.

The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings." Since the finding involved a failure to adequately implement fire prevention and administrative controls for transient combustibles, the inspectors dispositioned the finding using NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." In accordance with Manual Chapter 0609, Appendix F, Question 1.3.1.A, the inspectors determined that the finding was of very low safety significance (Green) because the reactor would be able to reach and maintain safe shutdown since the safe shutdown path was deemed independent of fire damage state scenarios for the given fire ignition source. The finding had a cross-cutting aspect in the area of human performance, teamwork, because the licensee failed to properly communicate expectations to individuals performing work during the course of implementing corrective actions [H.4].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that measures shall be established to assure that conditions adverse to

quality are promptly identified and corrected. Contrary to the above, between March 23, 2016, and April 25, 2016, the licensee failed to establish measures to assure that a condition adverse to quality was promptly identified and corrected. Specifically, the licensee failed to remove improperly stowed transient combustibles when notified by the inspectors. The licensee addressed this deficiency by removing the networking equipment and power cable and conducting a performance management review of the actions involved with correcting the condition and closing the condition report. Because this finding is of very low significance and was entered into the licensee's CAP as Condition Report CR-RBS-2015-03152, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy: NCV 05000458/2016002-03, "Failure to Identify and Correct Improperly Stowed Transient Combustibles."

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

.1 (Closed) Licensee Event Report (LER) 05000458/2015-009-01, "Automatic Reactor Scram Due to Partial Loss of Offsite Power Caused by Fault in Local 230kV Switchyard"

This LER described additional, amplifying information to that contained in LER 2015-009-00, issued on January 26, 2016. The original LER described an automatic reactor scram from 100 percent power that occurred due to a partial loss of offsite power originating from a fault in the 230kV switchyard. This revision to the original LER provides additional information on the cause of the switchyard fault, which was determined to be an animal induced fault. The original LER was reviewed during a special inspection and was closed in NRC Inspection Report 05000458/2016009. The results of the review and the associated finding are discussed in Section 4OA3 of the special inspection report (ML16133A174). LER 05000458/2015-009-01 is closed.

These activities constitute completion of one event follow-up sample, as defined in Inspection Procedure 71153.

.2 (Closed) Unresolved Item (URI) 07200049/2012001-01, Fuel Assemblies' Minimum Enrichment is Not Bounded by Offsite Dose Calculation Required by 10 CFR 72.104

During the routine Independent Spent Fuel Storage Installation (ISFSI) inspection conducted on September 25-27, 2012, a URI was identified and documented in routine ISFSI NRC Inspection Report 05000458/2012011 and 07200049/2012001 (ML12299A101). Title 10 of *Code of Federal Regulations* (CFR) 72.212 (b)(5)(iii) requires general licensees to perform a written evaluation that demonstrates the radiological dose beyond the licensee's controlled area boundary will not exceed 25 millirem a year as required by 10 CFR 72.104. During a review of RBS's 10 CFR 72.104 calculation in the Holtec HI-2043196 Report, NRC inspectors identified that conservative assumptions may not have been used. The Holtec Report, Section 4, "Assumptions," and the computer files attached used 4 percent enrichment as the design basis fuel in the calculations. However, RBS had loaded several casks with enrichments below this value, such as Cask #8 where all 68 fuel assemblies were below 2.49 percent enrichment and Cask #16 with spent fuel assemblies as low as 2.231 percent enrichment. As fuel enrichments decrease, the dose from the cask increases for the same burnup. This is due to the fact that as the initial enrichment decreases, the fuel is exposed to a larger neutron fluence to achieve the same burnup. The larger neutron fluence generates larger actinide content which results in a larger neutron source term

and secondary gamma source term as illustrated in NUREG/CR-6716, "Recommendations on Fuel Parameters for Standard Technical Specifications for Spent Fuel Storage Casks." The NRC inspectors opened a URI because it was unclear if the licensee's calculation, as required by 10 CFR 72.212 (b)(5)(iii), bounded all the fuel that had been placed at the ISFSI.

River Bend Station opened a condition report, CR-RBS-2012-06153, to track the URI and re-evaluate their calculation. The Holtec HI-2043196 Report, Revision 1, was created to analyze the bounding source terms of the currently loaded casks to determine if the licensee's calculation remained bounded. The analysis also reviewed the licensee's remaining fuel inventory that was in the spent fuel pool to ensure future loadings would also be bounded by the calculation. The Holtec Report concluded that radiation source terms for all fuel at RBS was bounded by the analyzed source terms from the original report. The original calculation utilized higher burnups and lower cooling times which presented a conservative calculation even though it utilized an assumed higher enrichment value. The inspectors concluded the licensee had performed adequate corrective actions to address the URI and demonstrated that their calculation conservatively met the 10 CFR 72.212 (b)(5)(iii) and 10 CFR 72.104 requirements.

No additional deficiencies were identified during review of this URI.

URI 07200049/2012001-01 is closed.

#### **40A5 OTHER ACTIVITIES**

##### Operation of an Independent Spent Fuel Storage Facility at Operating Plants (60855.1)

###### a. Inspection Scope

A routine ISFSI inspection was conducted at the RBS on May 10-12, 2016, by Region IV Division of Nuclear Material Safety inspectors. The inspectors observed and evaluated select licensee loading, processing, and heavy load procedures associated with the licensee's ISFSI program. Inspectors performed a review of the dry fuel storage records for the one canister that had been loaded at the ISFSI since the last NRC ISFSI inspection (August 2014). The canister contents were reviewed to verify that the licensee was loading fuel in accordance with the TS for approved contents. Additionally, contents of three previously loaded casks were also reviewed to verify document retrievability. Documents reviewed included multi-purpose canister (MPC) loading maps and fuel assembly specific information such as, identification, decay heat, cooling time, average U-235 enrichment, burnup values, and other information. River Bend Station utilizes a general license and loads canisters in accordance with the Holtec's HI-STORM 100, Amendment 5, and Final Safety Analysis Report (FSAR), Revision 7. River Bend Station had 23 loaded HI-STORM 100S Version B casks containing MPC-68 canisters at the ISFSI at the time of the routine inspection.

The inspectors requested documentation related to maintenance of the fuel building cask handling crane, the annual maintenance of the licensee's special lifting devices, and the annual maintenance of the site's loaded HI-STORM casks and ISFSI pad. Documents were provided that demonstrated the fuel building cask handling crane was inspected on an annual basis in accordance with the American Society of Mechanical

Engineers B30.2 safety requirements. The annual maintenance as required by American National Standards Institute N14.6 for special lifting devices was completed for the following special lifting devices: the HI-TRAC lifting trunnions, lift yoke, lift yoke extension, and the HI-STORM/HI-TRAC lifting brackets. All equipment passed the visual inspection, the dimensional testing, and either the magnetic particle or liquid penetrant non-destructive examinations. The licensee had completed annual inspection and maintenance of their loaded HI-STORM casks and ISFSI pad in accordance with FSAR Table 9.2.1 for two calendar years that were reviewed, 2014 and 2015.

Inspectors reviewed the radiological conditions at the RBS ISFSI through a document review of the most recent radiological survey and three calendar years of thermoluminescent dosimeter monitoring data from around the ISFSI. A dry cask loading supervisor and one radiation protection (RP) technician accompanied the NRC inspectors during a walk-down of the ISFSI pad. A radiological survey was performed by the RP technician to record gamma exposure rates. The measurements taken by the RP technician were consistent with measurements recorded on the most recent ISFSI site survey. The radiological conditions in and around the ISFSI were as expected for the age and heat load of the 23 currently loaded spent fuel storage casks. Annual Radiological Environmental Operating Reports for the RBS site were reviewed for the last two calendar years. The reports documented the dose equivalent to any real individual located beyond the site controlled area had been well below the 10 CFR 72.104(a)(2) requirement of less than 25 millirem per year.

A review of the CAP associated with the ISFSI was conducted by the NRC inspectors. A list of CRs issued since the last NRC ISFSI inspection was provided by the licensee for the cask handling crane and ISFSI operations. When a problem was identified, the licensee would document the issue as a CR in the licensee's CAP.

Of the list of CRs provided relating to the ISFSI and the cask handling cranes, 12 were selected by the NRC inspectors for further review. The CRs were related to a variety of issues. The CRs reviewed were well documented and properly categorized based on the safety significance of the issue. The corrective actions taken were appropriate for the situations. Based on the comprehensiveness of the CRs, the licensee demonstrated a high attention to detail in regard to the maintenance and operation of their ISFSI program and the cask handling crane. No NRC safety concerns were identified related to the CRs reviewed.

The licensee's 10 CFR 72.48 screenings and evaluations for ISFSI program changes since the last NRC routine ISFSI inspection were reviewed to determine compliance with regulatory requirements. The RBS had not performed any 10 CFR 72.48 full evaluations since the last NRC ISFSI inspection. The NRC inspectors reviewed one 10 CFR 72.48 screen for a modification to the slopes surrounding the ISFSI. River Bend Station had installed concrete canvas sheets over the slopes to provide erosion protection. The one screening reviewed was determined to be adequately evaluated by the licensee. The licensee had made no 10 CFR 50.59 screenings or evaluations associated with the fuel building cask handling crane since the last inspection.

An onsite review of the Quality Assurance audits and surveillance reports related to dry cask storage activities at the RBS ISFSI was performed by the NRC inspectors. The Quality Assurance audit reports and surveillances resulted in several CRs. The NRC inspectors reviewed the corrective actions resulting from the CRs to ensure that the

identified deficiencies were properly categorized based on their safety significance and properly resolved. All identified deficiencies had been properly categorized and resolved by the licensee.

b. Findings

No findings were identified.

**4OA6 Meetings, Including Exit**

Exit Meeting Summary

On May 12, 2016, the inspectors debriefed Mr. W. Maguire, Site Vice President, and other members of the licensee's staff of the results of the routine ISFSI inspection documented in Section 4OA5. Licensee personnel acknowledged the information presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On June 13, 2016, the inspectors presented the radiation safety inspection results to Mr. M. Chase, Director of Regulatory and Performance Improvement, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On July 18, 2016, the inspectors presented the inspection results to Mr. W. Maguire, 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.



## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

D. Burnett, Director, Emergency Planning, Entergy South  
J. Campbell, ISFSI Project Manager  
J. Carter, Engineering  
M. Chase, Director, Regulatory & Performance Improvement  
B. Cole, Senior Manager, Fleet Radiation Protection  
R. Conner, Manager, Nuclear Oversight  
R. Cook, Manager, Security  
K. Crissman, Senior Manager, Maintenance  
D. Fletcher, Manager, Supply Chain  
B. Ford, Senior Manager, Fleet Regulatory Assurance  
T. Gates, Manager, Operations Support  
J. Henderson, Manager, Systems & Components Engineering  
R. Hite, Supervisor, Radiation Protection  
K. Huffstatler, Acting Manager, Regulatory Assurance  
R. Leasure, Superintendent, Radiation Protection  
P. Lucky, Manager, Performance Improvement  
W. Maguire, Site Vice President  
C. Miller, Manager, Site Projects and Maintenance Services  
P. O'Conner, Manager, Training  
S. Peterkin, Manager, Radiation Protection  
J. Reynolds, Senior Manager, Operations  
C. Rich, General Manager, Plant Operations  
D. Sandlin, Manager, Design & Program Engineering  
T. Schenk, Manager, Emergency Preparedness  
S. Vazquez, Director, Engineering  
T. Venable, Assistant Manager, Operations  
J. Vukovics, Supervisor, Reactor Engineering  
J. Wieging, Senior Manager, Production  
J. Wilson, Manager, Chemistry

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened and Closed

05000458/2016002-01	NCV	Failure to Follow Station Guidance on Use of Temporary Power Cables and Control of Transient Combustibles (Section 1R05)
05000458/2016002-02	NCV	Failure to Conduct Common Cause Failure Evaluation in Response to Inoperable Emergency Diesel Generator (Section 4OA2.2)
05000458/2016002-03	NCV	Failure to Identify and Correct Improperly Stowed Transient Combustibles (Section 4OA2.3)

### Closed

05000458/2015-009-01	LER	Automatic Reactor Scram Due to Partial Loss of Offsite Power Caused by Fault in Local 230kV Switchyard (Section 4OA3.1)
07200049/2012001-0	URI	Fuel Assemblies' Minimum Enrichment is Not Bounded by Offsite Dose Calculation Required by 10 CFR 72.104 (Section 4OA3.2)

## LIST OF DOCUMENTS REVIEWED

### **Section 1R01: Adverse Weather Protection**

#### Condition Reports (CRs)

CR-RBS-2016-03959    CR-RBS-2016-03990

#### Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
RBG-46554	Response to Generic Letter 06-02, Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power	April 3, 2006

#### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AOP-0029	Severe Weather Operation	038
ENS-DC-199	Off Site Power Supply Design Requirements Nuclear Plant Interface Requirements	9
ENS-DC-201	ENS Transmission Grid Monitoring	7

## Section 1R04: Equipment Alignment

### Condition Reports (CRs)

CR-RBS-2015-02389	CR-RBS-2015-02390	CR-RBS-2015-03014	CR-RBS-2015-03081
CR-RBS-2015-04004	CR-RBS-2015-04308	CR-RBS-2015-04309	CR-RBS-2015-04332
CR-RBS-2015-04562	CR-RBS-2015-06533	CR-RBS-2015-07464	CR-RBS-2015-07677
CR-RBS-2015-07732	CR-RBS-2015-08266	CR-RBS-2015-08690	CR-RBS-2015-09010
CR-RBS-2016-00059	CR-RBS-2016-00926	CR-RBS-2016-01415	CR-RBS-2016-02146
CR-RBS-2016-02153	CR-RBS-2016-02355	CR-RBS-2016-02451	CR-RBS-2016-02477

### Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
PID-09-10E	System 256 Service Water – Standby	24
PID-36-01A	System 052 Control Rod Drive Hydraulic	21
PID-36-01C	System 052 Control Rod Drive Hydraulic	21

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
SOP-0002	Control Rod Drive Hydraulics (SYS #52)	047
SOP-0030	High Pressure Core Spray	030
SOP-0042	Standby Service Water System (SYS #256)	042

## Section 1R05: Fire Protection

### Calculation

<u>Number</u>	<u>Title</u>	<u>Revision</u>
G13.18.12.2-022	River Bend Station Combustible Loading	005

### Condition Reports (CRs)

CR-RBS-2015-07247	CR-RBS-2015-08289	CR-RBS-2015-08316	CR-RBS-2016-02355
CR-RBS-2016-02398	CR-RBS-2016-02571	CR-RBS-2016-02948	CR-RBS-2016-02976
CR-RBS-2016-03001	CR-RBS-2016-03152		

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AB-070-501	LPCS Pump Room Fire Area AB-6/Z-1	4
AB-095-511	LPCS Panel Room Fire Area AB-6/Z-2	3

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AB-141-532	SGTS Filter B Room Fire Area AB-13	2
ADM-0073	Temporary Services and Equipment	307
CB-098-123	Water Chiller Equipment 1B Room Fire Area C-13E	3
CB-116-128	Cable Chase III Fire Area C-9	3
DG-098-054	Diesel Generator A Room Fire Area DG-6/Z-1	4
EN-DC-161	Control of Combustibles	13
EN-TQ-25	Fire Brigade Drills	4
RB-114-004	HCU Area East Fire Area RC-3/Z-3	3
RB-114-005	HCU Area West RC-4/Z-3	2

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

Condition Reports (CRs)

CR-RBS-2016-02827 CR-RBS-2016-02831 CR-RBS-2016-03379

**Section 1R12: Maintenance Effectiveness**

Condition Reports (CRs)

CR-RBS-2015-05515 CR-RBS-2015-08476 CR-RBS-2015-08515 CR-RBS-2016-00119  
CR-RBS-2016-00362 CR-RBS-2016-01428 CR-RBS-2016-01453 CR-RBS-2016-04353

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-DC-143	Engineering Health Reports	18
EN-DC-203	Maintenance Rule Program	3
EN-DC-204	Maintenance Rule Scope and Basis	3
EN-DC-205	Maintenance Rule Monitoring	5
EN-DC-206	Maintenance Rule (A)(1) Process	3
EN-LI-102	Corrective Action Program	26

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

Condition Reports (CRs)

CR-RBS-2015-08479 CR-RBS-2016-03191

Corrective Action

WT-WRBS-2014-00171

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
ADM-0096	Risk Management Program Implementation and On-line Maintenance Risk Assessment	321
EN-WM-104	On Line Risk Assessment	012

Work Orders (WOs)

WO 00430343            WO 00434402

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

Condition Reports (CRs)

CR-RBS-2014-08404    CR-RBS-2015-03001    CR-RBS-2015-03123    CR-RBS-2015-03289  
CR-RBS-2015-08404    CR-RBS-2016-02306    CR-RBS-2016-02629    CR-RBS-2016-02645  
CR-RBS-2016-02672    CR-RBS-2016-02976

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
SOP-0053	Standby Diesel Generator and Auxiliaries	333

Work Order (WO)

WO 00435053

**Section 1R18: Plant Modifications**

Drawing

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0247.230-000-070	Main Feedwater Control Offset Valve Assembly with ATI Piston DA Actuation	2

Engineering Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EC 65190, Work at Risk 1	Replace the Spring Portion of the Variseal in C33-LVF001A, 001B, and 001C with the Kazrel O-Ring	0

Engineering Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EC 65282	Replace Internal Metal V-Spring from Variseal in Feedwater Regulating Valves with O-Ring	0
TMOD 65282	Replace Internal Metal V Spring from Variseal in Feedwater Regulating Valves with O-Ring	0

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
DRN:2062-1602-01	River Bend Station Reactor Feedwater Level Control Valves Temporary Modification ITPR	June 20, 2016

Work Orders (WOs)

WO 00439530-17	WO 00439530-18	WO 00439532-17	WO 00439532-18
WO 00439534-17	WO 00439534-18		

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

Condition Reports (CRs)

CR-RBS-2016-02181	CR-RBS-2016-02808	CR-RBS-2016-02860	CR-RBS-2016-02871
CR-RBS-2016-03516	CR-RBS-2016-03518	CR-RBS-2016-03519	CR-RBS-2016-03522
CR-RBS-2016-03539	CR-RBS-2016-03546	CR-RBS-2016-03562	CR-RBS-2016-03566
CR-RBS-2016-03597	CR-RBS-2016-03619	CR-RBS-2016-03637	CR-RBS-2016-03874

Engineering Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EC-64705	CR-RBS-2016-03637 GTS-FLT1B LOP/LOCA FIX	0 & 1
TMOD 64705	GTS-FN1B Breaker Simultaneous Open and Close Logic Change	0 & 1

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-DC-136	Temporary Modifications	12
EN-LI-100	Process Applicability Determination	18
STP-051-4249	ECCS Reactor Vessel Pressure Low/SRV Actuation Instrumentation Channel Calibration Test and LSFT (B21-N697E, B21-N698E, B21-N668E, B21-N699E, B21-N670E, B21-N616E, B21-N618E, B21-N671E, B21-N068E)	25

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP-257-0202	Standby Gas Treatment System Filter Train B Monthly Operability Test	015
STP-309-0206	Division I Diesel Generator 184 Day Operability Test	26
STP-309-6301	Division I EDG Fuel Oil Transfer Pump and Valve Operability Test	20

Work Orders (WOs)

WO 00384551	WO 00398644	WO 00429669	WO 00440426
WO 00445871	WO 00445913		

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

Condition Reports (CRs)

CR-RBS-2016-04351	CR-RBS-2016-04353	CR-RBS-2016-04354	CR-RBS-2016-04362
CR-RBS-2016-04434	CR-RBS-2016-04443	CR-RBS-2016-04446	

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
GE-828E446AA, Sheet 28	Elementary Diagram Reactor Recirculation System	34
GE-828E531AA, Sheet 11	Elementary Diagram Reactor Protection System	29

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
	RBS PO-16-01 Schedule	June 2, 2016
EN-WM-101	Outage Control Center Log – Days	June 12, 2016
EN-WM-101	Outage Control Center Log – Nights	June 12, 2016

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AOP-0001	Reactor Scram	032
GOP-0002	Power Decrease/Plant Shutdown	075
OSP-0037	Shutdown Operations Protection Plan (SOPP)	034
SOP-0031	Residual Heat Removal (SYS #204)	332

**Section 1R22: Surveillance Testing**

Condition Reports (CRs)

CR-RBS-2014-00975 CR-RBS-2014-02320 CR-RBS-2014-02329 CR-RBS-2014-02407  
CR-RBS-2014-05263 CR-RBS-2016-03324

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP-051-4610	RPS/RHR – Reactor Vessel Steam Dome Pressure-High Channel Functional Test	2
STP-057-3805	CRD Containment Control Rod Drive Removal Hatch Leak Rate Test	004
STP-203-1602	E22-S001 Battery Inspection	14
STP-203-1702	E22-S001 Battery Performance Discharge Test	21
STP-209-6310	RCIC Quarterly Pump and Valve Operability Test	038
STP-309-0206	Division I Diesel Generator 184 Operability Test	26

Work Orders (WOs)

WO 51557812 WO 52470582 WO 52593972 WO 52594294  
WO 52660044 WO 52675097 WO 52684550 WO 52687807

**Section 1EP6: Drill Evaluation**

Training Document

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RDRL-EP-1200	Site Drill Scenario	4



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

### Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
LO-RLO-2015-00055	Pre- NRC Inspection ALARA Planning and Controls	July 29, 2015
LO-RLO-2015-00056	Radiological Access Controls	June 1, 2015
LO-RLO-2015-00057	Radioactive Source Control	August 3, 2015
LO-RLO-2015-00058	Contamination Control	September 11, 2015
LO-RLO-2015-00075	Radioactive Waste	July 14, 2015
LO-RLO-2015-00161	Occupational Radiation Safety	November 14, 2015
LO-RLO-2016-00011	Pre-NRC Radiological Hazard Assessment and Exposure Controls and PI Verification	March 2, 2016

### Condition Reports (CRs)

CR-RBS-2015-00992	CR-RBS-2015-01351	CR-RBS-2015-01871	CR-RBS-2015-01877
CR-RBS-2015-01942	CR-RBS-2015-02066	CR-RBS-2015-02069	CR-RBS-2015-02083
CR-RBS-2015-02254	CR-RBS-2015-02304	CR-RBS-2015-02439	CR-RBS-2015-02531
CR-RBS-2015-03525	CR-RBS-2015-05470	CR-RBS-2015-05476	CR-RBS-2015-05535
CR-RBS-2015-06058	CR-RBS-2015-06926	CR-RBS-2016-03707	CR-RBS-2016-03992
CR-RBS-2016-03992	CR-RBS-2016-04054	CR-RBS-2016-04129	CR-RBS-2016-04338

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
COP-0129	Operation of the OLNC Injection Skid (P87-P100)	00
CSP-0143	Noble Chem Application	01
EN-RP-100	Radiation Worker Expectations	10
EN-RP-101	Access Control for Radiologically Controlled Areas	11
EN-RP-105	Radiological Work Permits	14
EN-RP-108	Radiation Protection Posting	17
EN-RP-151	Radiological Diving	03
FHP-0001	Control of Fuel Handling and Refueling Operations	35
FHP-0008	Fuel Transfer Tube Operations	32
RPP-0005	Management of Radiological Postings	29
RSP-0227	Drywell Fuel Movement Coordination Plan	04
RSP-0229	RP Response to Changing Plant Conditions	17 and 18

Radiation Work Permits and Associated ALARA Plans, Radiological Surveys, Work Orders, TEDE Evaluations, etc.

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
2015-1800	Low Risk Refuel Disassembly, Reassembly, Support Activities, including Supervisors and Fuel Handlers	09
2016-1207	IFTS (Inclined Fuel Transfer System) Underwater Work (Including Diving)	June 3, 2016
2016-1317	High Risk IRM/SRM Activities (Detector Change Outs)	February 22, 2016
2016-1319	SRM – C Drive Tube Replacement, Troubleshooting, etc.	February 25, 2016
2016-1320	Refuel Floor Activities (Including the Moisture Separator Lift)	June 14, 2016

**Section 2RS3: In-Plant Airborne Radioactivity Control and Mitigation**

Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
LO-RLO-2016-0012	Pre-NRC In-Plant Airborne Radioactivity Control and Mitigation	March 30, 2016

Condition Reports (CRs)

CR-RBS-2014-04109	CR-RBS-2014-04218	CR-RBS-2014-06041	CR-RBS-2014-06154
CR-RBS-2014-06330	CR-RBS-2015-00615	CR-RBS-2015-01751	CR-RBS-2015-02276
CR-RBS-2015-04915	CR-RBS-2015-07126	CR-RBS-2016-00405	CR-RBS-2016-00808
CR-RBS-2016-01057	CR-RBS-2016-01543	CR-RBS-2016-01619	

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
Att. 9.1 to EN-RP-502	Face Piece Inspection Log – Monthly	2015 and 2016
Att. 9.2 to EN-RP-502	SCBA Inspection Log – Monthly	2015 and 2016
	Tri-Air Testing Laboratory Report – Compressed Air/Gas Quality Testing	2015 and 2016

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EIP-2-103	Emergency Equipment Inventory	23

## Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-RP-404	Operation and Maintenance of HEPA Vacuum Cleaners and HEPA Ventilation Units	6
EN-RP-501	Respiratory Protection Program	5
EN-RP-502	Inspection and Maintenance of Respiratory Protection Equipment	9
EN-RP-502-01	FireHawk M7 SCBA	0
EN-RP-502-02	Flow Testing MSA Breathing Apparatus	0
EN-RP-502-03	AirHawk II SCBA	0
EN-RP-503	Selection, Issue and Use of Respiratory Protection Equipment	7
EN-RP-504	Breathing Air	3
EN-RP-504-03	Operation and Maintenance of the Baron II SCBA Fill System	0
EN-RP-505	PortaCount Respirator Fit Testing	7
RPP-0118	Calibration and Maintenance of Portable Radiological Air Samplers	4

### **Section 40A1: Performance Indicator Verification**

#### Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
RBG-47677	Electronic Submittal of First Quarter NRC Performance Indicator Information	April 21, 2016
RBS-SA-06-00001	RBS Mitigating System Performance Index Basis Document and Supporting Documents	02

#### Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-LI-114	Performance Indicator Process	7

### **Section 40A1: Performance Indicator Verification**

#### Condition Reports (CRs)

CR-RBS-2015-01746 CR-RBS-2015-02056 CR-RBS-2015-03400

## Section 40A2: Problem Identification and Resolution

### Condition Reports (CRs)

CR-RBS-2013-07066	CR-RBS-2015-01783	CR-RBS-2015-04794	CR-RBS-2015-07147
CR-RBS-2016-00210	CR-RBS-2016-00366	CR-RBS-2016-01027	CR-RBS-2016-01783
CR-RBS-2016-02355	CR-RBS-2016-02398	CR-RBS-2016-03152	CR-RBS-2016-03362
CR-RBS-2016-03387	CR-RBS-2016-03398	CR-RBS-2016-03412	CR-RBS-2016-03516
CR-RBS-2016-03518	CR-RBS-2016-03519	CR-RBS-2016-03522	CR-RBS-2016-03550
CR-RBS-2016-03582	CR-RBS-2016-03588	CR-RBS-2016-03708	CR-RBS-2016-03978

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AB-070-501	LPCS Pump Room Fire Area AB-6/Z-1	4
AB-095-511	LPCS Panel Room Fire Area AB-6/Z-2	3
ADM-0073	Temporary Services and Equipment	307
EN-DC-161	Control of Combustibles	13
EN-OP-104	Operability Determination Process	010

## Section 40A3.1: Follow-up of Events and Notices of Enforcement Discretion

### Condition Report (CR)

CR-RBS-2012-06153

### Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
HI-2043196	Dose Versus Distance from HI-STORM with MPC-68	1

## Section 40A5.1 Other Activities

### 10 CFR 72.48 Screens/Evaluations

EC 59451

### Condition Reports (CRs)

CR-RBS-2012-06153	CR-RBS-2013-01274	CR-RBS-2014-04023	CR-RBS-2015-01436
CR-RBS-2015-01935	CR-RBS-2015-02559	CR-RBS-2015-03001	CR-RBS-2015-03568
CR-RBS-2015-03569	CR-RBS-2015-07678	CR-VN-2014-00053	

### Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-DC-215	Cask 23 Fuel Records	5

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-DC-215	Cask 19 Fuel Records	3
EN-DC-215	Cask 13 Fuel Records	1
EN-DC-218	Fire Protection Impact Reviews	10
EN-LI-102	Corrective Action Program	26
EN-LI-112	10 CFR 72.48	11
EN-LI-100	Process Applicability Determination	18
REP-0061	Cask 6 Fuel Records	301
STP-000-0001	Daily Operating Logs (completed for December 14, April 15 and October 15)	79

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
	10 CFR 72.212 Evaluation Report (Corporate)	8
	10 CFR 72.212 Evaluation Report (RB Specific)	2
	Annual Radiological Environmental Operating Report	April 29, 2015
	Annual Radiological Environmental Operating Report	April 30, 2016
	Certificate of Compliance 1014 Holtec HI-STORM 100	Amendment 5
	Dry Cask Stack-up Dynamic Analysis	0
	Dry Cask Stack-up Analysis for River Bend	0
	Explosive Hazard Evaluation for ISFSI	0
	Fire Hazards Evaluation for ISFSI	0
	Holtec HI-STORM 100 FSAR	7
	PAD EN-DC-215 for Revision 4 and Revision 5	April 12, 2012
	TLD DATA from Monitoring Areas ISFSI Locations	2013, 2014, 2015
ER-RB-2000-001-045	Holtec Cask Stack-up Analysis	0
QA-20-2014-RBS-01	Quality Assurance Audit Report	August 2014

Work Orders (WOs)

WO 00383534  
WO 52506664

WO 00387302  
WO 52575148

WO 52494786  
WO 52597290

WO 52497537

**The following items are requested for the  
Occupational Radiation Safety Inspection  
at River Bend Station  
(June 13-17, 2016)  
Integrated Report 2016002**

Inspection areas are listed in the attachments below.

Please provide the requested information on or before **May 23, 2016**.

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, Pete Hernandez at (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: March 2, 2015

- 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



**3. In-Plant Airborne Radioactivity Control and Mitigation (71124.03)**

Date of Last Inspection: August 11, 2014

- A. List of contacts and telephone numbers for the following areas:
  - 1. Respiratory Protection Program
  - 2. Self-contained breathing apparatus
- B. Applicable organization charts
- C. Copies of audits, self-assessments, vendor or NUPIC audits for contractor support (SCBA), and LERs, written since date of last inspection related to:
  - 1. Installed air filtration systems
  - 2. Self-contained breathing apparatuses
- D. Procedure index for:
  - 1. use and operation of continuous air monitors
  - 2. use and operation of temporary air filtration units
  - 3. Respiratory protection
- 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. Respiratory protection program
  - 2. Use of self-contained breathing apparatuses
  - 3. Air quality testing for self-contained breathing apparatus bottles
- F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the Airborne Monitoring program including:
  - 1. continuous air monitors
  - 2. Self-contained breathing apparatuses
  - 3. respiratory protection program

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 self-contained breathing apparatus-qualified personnel - reactor operators and emergency response personnel
- H. Inspection records for self-contained breathing apparatuses staged in the plant for use since date of last inspection.
- I. Self-contained breathing apparatus training and qualification records for control room operators, shift supervisors, STAs, and OSC personnel for the last year.

A selection of personnel may be asked to demonstrate proficiency in donning, doffing, and performance of functionality check for respiratory devices.