



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

**REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511**

May 10, 2019

Mr. Steven Vercelli  
Site Vice President  
Entergy Operations, Inc.  
5485 U.S. Highway 61N  
St. Francisville, LA 70775

**SUBJECT: RIVER BEND STATION – NRC INTEGRATED INSPECTION  
REPORT 05000458/2019001**

Dear Mr. Vercelli:

On March 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your River Bend Station. On April 24, 2019, the NRC inspectors discussed the results of this inspection with Mr. Kent Scott, General Manager of Plant Operations, and other members of your staff. The results of this inspection are documented in the enclosed report.

NRC inspectors documented two findings of very low safety significance (Green) in this report. These findings involved violations of NRC requirements.

If you contest the violations or significance of the violations documented in this inspection report, 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; and the NRC resident inspector at River Bend Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the 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 River Bend Station.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

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Jason W. Kozal, Chief  
Reactor Projects Branch C

Docket No. 05000458  
License No. NPF-47

Enclosure:  
Inspection Report 05000458/2019001

**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Number(s): 05000458

License Number(s): NPF-47

Report Number(s): 05000458/2019001

Enterprise Identifier: I-2019-001-0009

Licensee: Entergy Operations, Inc.

Facility: River Bend Station

Location: St. Francisville, LA

Inspection Dates: January 1, 2019 to March 31, 2019

Inspectors: L. Merker, Senior Resident Inspector (BWR/TL)  
B. Parks, Resident Inspector (BWR)  
T. DeBey, Resident Inspector (BWR)

Approved By: Jason W. Kozal  
Chief, Reactor Projects Branch C  
Division of Reactor Projects

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee’s performance by conducting a quarterly inspection at River Bend Station in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC’s program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. Violations and other additional items being considered in the NRC’s assessment are summarized in the table below.

### List of Findings and Violations

Failure to Maintain Appropriate Surveillance and Maintenance Procedures for the Division III Emergency Diesel Generator			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000458/2019001-01 Closed	[H.11] - Challenge the Unknown	71152
<p>The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the licensee’s failure to prescribe instructions appropriate to the circumstances, including appropriate quantitative or qualitative acceptance criteria, for an activity affecting quality. Specifically, instructions for surveillance and maintenance work on the turbocharger lubricating oil system of the Division III emergency diesel generator, which is an activity affecting quality, did not specify acceptance criterion for the DC lubricating pump motor continuity check nor did they require a post maintenance demonstration that the motor could run. As a result, the Division III emergency diesel generator was declared inoperable on November 28, 2018.</p>			
Inadvertent Initiation of Reactor Core Isolation Cooling due to Personnel Error			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Initiating Events	Green NCV 05000458/2019001-02 Closed	[H.5] - Work Management	71153
<p>The inspectors reviewed a self-revealed, Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the licensee’s failure to accomplish an activity affecting quality in accordance with a prescribed procedure. Specifically, while conducting surveillance testing on the reactor core isolation cooling (RCIC) system, technicians installed an incorrect test fixture and caused an inadvertent injection of RCIC into the reactor vessel.</p>			

### Additional Tracking Items

Type	Issue number	Title	Inspection Procedure	Status
LER	05000458/2018-007-00	Manual Reactor Scram due to Reactor Recirculation Pump Trip Caused by Transformer Failure	71153	Closed
LER	05000458/2018-008-00	Potential Loss of Safety Function and Unanalyzed Condition due to Legacy Design Deficiency in Control Building HVAC	71153	Closed
LER	05000458/2018-009-00	Inadvertent Initiation of Reactor Core Isolation Cooling due to Personnel Error	71153	Closed

### PLANT STATUS

River Bend Station began the inspection period at rated thermal power. On January 4, 2019, the unit was down powered to 85 percent to conduct a seal repair on main feedwater pump 1A. The unit was returned to rated thermal power on January 7, 2019. On January 12, 2019, the unit was down powered to 70 percent because of an issue with the inboard main steam isolation valve D solenoid pilot valve. The unit was returned to 75 percent power on January 13, 2019. The unit was shut down on March 30, 2019, to begin refueling outage RF-20 and remained shut down for the remainder of the inspection period.

### INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

### REACTOR SAFETY

#### 71111.01 - Adverse Weather Protection

##### External Flooding Sample (IP Section 03.04) (1 Sample)

The inspectors evaluated the site's readiness to cope with external flooding for the following areas:

- Control building on January 23, 2019
- Division I emergency diesel generator room on January 23, 2019
- Division II emergency diesel generator room on January 23, 2019
- Division III emergency diesel generator room on January 23, 2019

#### 71111.04 - Equipment Alignment

##### Partial Walkdown (IP Section 02.01) (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Division II 125 VDC system on January 17, 2019
- (2) Low pressure core spray system on March 7, 2019
- (3) Division I 125 VDC system on March 19, 2019

#### 71111.04S - Equipment Alignment

##### Complete Walkdown (IP Section 02.02) (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the high pressure core spray system on January 30, 2019.

#### 71111.05A - Fire Protection (Annual)

##### Annual Inspection (IP Section 03.02) (1 Sample)

The inspectors evaluated fire brigade performance on January 30, 2019.

#### 71111.05Q - Fire Protection

##### Quarterly Inspection (IP Section 03.01) (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) High pressure core spray room, fire areas AB-2/Z-1 and AB-2/Z-2, on January 30, 2019
- (2) Standby liquid control area, fire area RC-4/Z-4, on January 31, 2019
- (3) Division I, II, and III battery rooms, fire areas C-18, C-19, and C-21, on February 1, 2019
- (4) Low pressure core spray pump room, fire area AB-6/Z-1, on March 7, 2019

#### 71111.06 - Flood Protection Measures

##### Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- High pressure core spray pump room on March 18, 2019

##### Inspection Activities - Underground Cables (IP Section 02.02c.) (1 Sample)

The inspectors evaluated cable submergence protection in:

- Electrical manhole EMH2A on March 14, 2019
- Electrical manhole EMH103 on March 14, 2019

#### 71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

##### Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

The inspectors observed and evaluated licensed operator performance in the main control room during a reactor power maneuver on January 4, 2019.

##### Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

The inspectors observed and evaluated licensed operator requalification training in the simulator on February 12, 2019.

#### 71111.12 - Maintenance Effectiveness

##### Routine Maintenance Effectiveness Inspection (IP Section 02.01) (3 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Functional failure review of the high pressure core spray system on March 6, 2019
- (2) Functional failure review of containment unit cooler 1A on March 21, 2019
- (3) Functional failure review of the Division I emergency diesel generator on March 25, 2019

#### 71111.13 - Maintenance Risk Assessments and Emergent Work Control

##### Risk Assessment and Management Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Yellow risk during surveillance testing of low pressure coolant injection pump A on January 8, 2019
- (2) Yellow risk during surveillance testing of reactor core isolation cooling system on January 15, 2019
- (3) Yellow risk during inspection of Division I standby service water system on February 8, 2019
- (4) Yellow risk during inspection of Division II standby service water system on February 21, 2019

#### 71111.15 - Operability Determinations and Functionality Assessments

##### Sample Selection (IP Section 02.01) (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Division I control building air conditioning system after failure of air handling unit 2A to close electrically in the test position on March 4, 2019
- (2) Division I residual heat removal heat exchangers following thermal performance testing on March 11, 2019
- (3) Containment unit cooler 1A low air flow conditions on March 14, 2019
- (4) Division II hydrogen igniters surveillance testing results on March 21, 2019
- (5) Division II main steam positive leakage control system after failure of trip unit card on March 25, 2019

#### 71111.19 - Post Maintenance Testing

##### Post Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) Work Order 00514462, "SVV-MOV1B Major Actuator Inspection / Div 2," following actuator inspection of main steam line pressure relief isolation valve SVV-MOV1B on February 20, 2019
- (2) Work Order 00514461, "SWP-MOV503B Major Actuator Inspection / HVR-UC1B," following actuator inspection of containment unit cooler 1B return header inboard containment isolation valve SWP-MOV503B on February 20, 2019
- (3) Work Order 52829384, "IAS-C2A - Perform 4,000 Hr Inspection," following 4,000 hour preventive maintenance of instrument air compressor 2A on February 22, 2019



- (4) STP-403-0301, Revision 15, "Containment Unit Cooler HVR-UC1A Flow Rate Verification," following cooling coil cleaning due to low air flow conditions on March 14, 2019
- (5) STP-251-3205, Revision 16, "Diesel Fire Pump Operational Test," following system maintenance on fire pump engine 1B on March 18, 2019

#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

##### In Service Testing (IST) (IP Section 03.01) (2 Samples)

- (1) STP-201-6310, Revision 311, "SLC Pump and Valve Operability Test," on January 31, 2019
- (2) STP-205-6301, Revision 25, "LPCS Pump and Valve Operability Test," on March 7, 2019

##### Surveillance Testing (IP Section 03.01) (4 Samples)

- (1) STP-309-0201, Revision 062, "Division I Diesel Generator Operability Test," on January 7, 2019
- (2) STP-256-0201, Revision 304, "Div I SWP Valve Lineup Verification," on January 10, 2019
- (3) STP-051-4504, Revision 301, "NSSSS-Reactor Vessel Water Level-Low Low, Level 2; Low Low Low, Level 1, Channel Functional Test (B21-N682D, B21-N681D)," on January 23, 2019
- (4) STP-203-0201, Revision 308, "HPCS Piping Water Fill and Valve Position Verification," on January 29, 2019

#### 71114.06 - Drill Evaluation

##### Drill and/or Simulator-Based Licensed Operator Requalification Training (IP Section 02.01) (1 Sample)

The inspectors evaluated an emergency preparedness training drill on March 12, 2019.

#### **OTHER ACTIVITIES – BASELINE**

##### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

##### IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (1 Sample)

(01/01/2018–12/31/2018)

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02)  
(1 Sample)

(01/01/2018–12/31/2018)

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (1 Sample)

(01/01/2018–12/31/2018)

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 02.03) (1 Sample)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issue:

- Turbocharger lubricating oil pump failures on the Division III emergency diesel generator resulting in inoperability of the diesel generator

71153 - Follow-up of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (3 Samples)

The inspectors evaluated the following licensee event reports (LERs) which can be accessed at <https://lersearch.inl.gov/LERSearchCriteria.aspx>:

- (1) LER 05000458/2018-007-00, Manual Reactor Scram due to Reactor Recirculation Pump Trip Caused by Transformer Failure on February 1, 2018 (ADAMS Accession: ML18304A436):

The inspectors reviewed this LER and closed it to non-cited violation 05000458/2018012-04 issued in Inspection Report 05000458/2018012 (ADAMS Accession: ML18261A111).

- (2) LER 05000458/2018-008-00, Potential Loss of Safety Function and Unanalyzed Condition due to Legacy Design Deficiency in Control Building HVAC on September 25, 2018 (ADAMS Accession: ML18324A744):

The inspectors reviewed this LER and closed it to the licensee-identified violation issued in Inspection Report 05000458/2018003 (ADAMS Accession: ML18313A028).

- (3) LER 05000458/2018-009-00, Inadvertent Initiation of Reactor Core Isolation Cooling due to Personnel Error on November 2, 2018 (ADAMS Accession: ML19003A143):

The circumstances surrounding this LER are documented in the Inspection Results section.

## INSPECTION RESULTS

Failure to Maintain Appropriate Surveillance and Maintenance Procedures for the Division III Emergency Diesel Generator			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000458/2019001-01 Closed	[H.11] - Challenge the Unknown	71152
<p>The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to prescribe instructions appropriate to the circumstances, including appropriate quantitative or qualitative acceptance criteria, for an activity affecting quality. Specifically, instructions for surveillance and maintenance work on the turbocharger lubricating oil system of the Division III emergency diesel generator, which is an activity affecting quality, did not specify acceptance criterion for the DC lubricating pump motor continuity check nor did they require a post maintenance demonstration that the motor could run. As a result, the Division III emergency diesel generator was declared inoperable on November 28, 2018.</p>			
<p><u>Description:</u> On November 28, 2018, operators in the River Bend Station (RBS) main control room received an alarm, "Div III D/G System Trouble," for the Division III high pressure core spray (HPCS) emergency diesel generator. Investigation into the cause of the alarm revealed that both turbocharger lubricating oil pumps had failed, rendering the diesel generator inoperable. The inoperability lasted for about 8.5 hours while the oil pumps were repaired. Operability of the HPCS system during a loss of offsite power requires operability of its dedicated diesel generator. Since offsite power was available on November 28, 2018, the HPCS system remained operable. The HPCS diesel generator is one of three emergency diesel generators that are required to be operable by RBS Technical Specification 3.8.1. Per RBS Procedure SOP-0052, "HPCS Diesel Generator (Sys #309)," Revision 58, for Division III (HPCS) diesel generator operation, no planned starts of the engine should be performed without a turbocharger lubricating oil pump operating. The procedure also stated that if both (AC and DC-powered) turbocharger lubricating pumps are out of service, the diesel engine is not available for operation. Lubrication of the diesel engine turbocharger is supplied by an engine-driven pump while the engine is running and an AC electric pump when the engine is stopped. If the AC pump would stop while the engine is not running, a DC electric pump is designed to start so that lubricating oil flow to the turbocharger is maintained. The turbocharger lubrication system has two primary functions: (1) lubrication of the turbocharger bearings and (2) cooling of the turbocharger.</p> <p>Condition Report CR-RBS-2018-06363 documented the loss of turbocharger lubricating oil flow to the HPCS diesel generator that resulted in its inoperability on November 28, 2018.</p> <p>Troubleshooting by station personnel revealed that one of the two brushes on the DC lubricating pump motor was mispositioned, causing the motor to fail. Questioning from the inspectors revealed that the station's surveillance and maintenance of the DC motor was done on a biennial basis and was not appropriate to detect the mispositioned brush or to verify the ability of the motor to run after the electrical surveillance. Additionally, the licensee's work order instructions were not appropriate and did not contain appropriate quantitative or qualitative acceptance criteria. Further inspector questioning revealed that the same instruction inadequacies also existed for the HPCS emergency diesel generator DC motor for the associated circulating oil lubrication system. It is likely that the DC motor was not able to</p>			

operate from September 18, 2017 (the most recent inspection and preventive maintenance date), until November 28, 2018.

Corrective Actions: The licensee removed the DC motor from the diesel engine, reinstalled the mispositioned brush, returned the motor to the diesel engine, and performed a successful post maintenance test. Other corrective actions that the licensee is considering include performing monthly (vs. biennial) functional testing of the DC oil pump, requiring removal of the DC motor in order to do the brush inspections, improving the DC motor inspection process, sharing the lessons learned from this event, and revising the procedural requirement for declaring the diesel engine inoperable when the turbocharger lubricating oil flow is lost.

Corrective Action Reference: CR-RBS-2018-06363

Performance Assessment:

Performance Deficiency: The failure to prescribe instructions appropriate to the circumstances, including appropriate quantitative or qualitative acceptance criteria, for surveillance and maintenance of the turbocharger lubricating oil system of the Division III (HPCS) emergency diesel generator, resulting in inoperability of the diesel generator, was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment 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, instructions for surveillance and maintenance work on the turbocharger lubricating oil system of the Division III emergency diesel generator, which is an activity affecting quality, did not specify acceptance criterion for the DC lubricating pump motor continuity check nor did they require a post maintenance demonstration that the motor could run. As a result, the Division III emergency diesel generator was declared inoperable on November 28, 2018.

Significance: The inspectors assessed the significance of the finding using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," dated July 1, 2012. The finding was determined to be of very low safety significance (Green) because it did not represent a deficiency affecting the design or qualification of a mitigating structure, system, or component; did not represent a loss of system and/or function; did not represent an actual loss of function of at least a single train for more than its technical specification allowed outage time or two separate safety systems out-of-service for more than its technical specification allowed outage time; and did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours.

Cross-cutting Aspect: The finding had a cross-cutting aspect in the area of human performance, challenge the unknown, because the licensee did not stop when faced with uncertain conditions, and risks were not evaluated and managed before proceeding. Specifically, the licensee did not question the lack of acceptance criterion for the DC lubricating pump motor continuity check or post maintenance demonstration that the motor could run [H.11].

Enforcement:

Violation: Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances. The instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Contrary to the above, on September 18, 2017, the surveillance and maintenance procedure for the turbocharger lubricating oil system of the Division III emergency diesel generator, which is an activity affecting quality, was not appropriate to the circumstances because it did not include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, instructions for surveillance and maintenance work on the turbocharger lubricating oil system of the Division III emergency diesel generator, which is an activity affecting quality, did not specify acceptance criterion for the DC lubricating pump motor continuity check nor did they require a post maintenance demonstration that the motor could run. As a result, the Division III emergency diesel generator was declared inoperable on November 28, 2018.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Inadvertent Initiation of Reactor Core Isolation Cooling due to Personnel Error

Cornerstone	Significance	Cross-cutting Aspect	Report Section
Initiating Events	Green NCV 05000458/2019001-02 Closed	[H.5] - Work Management	71153

The inspectors reviewed a self-revealed, Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to accomplish an activity affecting quality in accordance with a prescribed procedure. Specifically, while conducting surveillance testing on the reactor core isolation cooling (RCIC) system, technicians installed an incorrect test fixture and caused an inadvertent injection of RCIC into the reactor vessel.

Description: At 3:53 a.m. on November 2, 2018, during performance of surveillance Procedure STP-051-4524, "ECCS/RCIC-Reactor Vessel Water Level-Low Low, Level 2; Low Low Low, Level 1; Channel Functional Test (B21-N692E, B21-N691E)," Revision 5, RCIC initiated and began injecting water into the reactor vessel. After verifying that the initiation was inadvertent, operators tripped the RCIC turbine in accordance with Procedure AOP-0034, "Inadvertent Initiation of an ECCS System or RCIC," Revision 2, and declared RCIC inoperable. Operators subsequently restored RCIC to a normal standby lineup and returned the system to operable status.

Subsequent investigation determined that technicians caused the initiation by installing an incorrect test fixture into the system. Procedure STP-051-4524, Step 7.1.9, instructed technicians to connect a red A/B contact test fixture and Simpson Multimeter to test jack E51A-J1, RCIC LOGIC A TEST. Instead of installing that contact test fixture, technicians installed a green B/C contact test fixture. The installation of the green B/C contact test fixture

into jack E51A-J1 satisfied the coincidence logic for RCIC initiation, causing the inadvertent injection into the core.

The licensee conducted a review of the event and identified multiple deficiencies in the area of work management. In an attempt to recover lost time in the work schedule, the nightshift supervisor directed the technicians to perform an unusually high number of surveillance items in one shift. The supervisor assigned the items at the beginning of the shift and proceeded to focus on other plant issues for the remainder of the night, failing to sufficiently engage with and oversee the risk-significant testing that was being carried out. The technicians failed to fill out the required pre-job brief checklist and the peer reviewing technician failed to conduct an adequate peer check prior to the critical step.

Corrective Actions: The licensee restored RCIC to operable status after the event and issued corrective actions to augment supervisory oversight of pre-job briefs and testing evolutions.

Corrective Action Reference: CR-RBS-2018-05854

Performance Assessment:

Performance Deficiency: The failure to accomplish an activity affecting quality in accordance with a prescribed procedure was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor, and therefore a finding, because it was associated with the human performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, by failing to properly complete the steps of the surveillance test procedure, the licensee caused an inadvertent RCIC injection into the reactor vessel.

Significance: The inspectors assessed the significance of the finding using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 1, "Initiating Events Screening Questions," dated June 19, 2012. The inspectors determined that the finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

Cross-cutting Aspect: The finding had a cross-cutting aspect in the area of human performance, work management, because the licensee failed to implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. Specifically, the licensee conducted a risk-significant evolution with inadequate concurrent peer check and insufficient supervisory oversight [H.5].

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Contrary to the above, on November 2, 2018, the licensee failed to accomplish an activity affecting quality in accordance with a prescribed procedure appropriate to the circumstances. Specifically, during surveillance testing of RCIC, which is an activity affecting quality, the licensee violated the surveillance test procedure by installing the wrong test fixture into the system.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

**EXIT MEETINGS AND DEBRIEFS**

The inspectors verified no proprietary information was retained or documented in this report.

- On April 24, 2019, the inspector presented the quarterly resident inspector inspection results to Mr. K. Scott, General Manager of Plant Operations, and other members of the licensee staff.

## DOCUMENTS REVIEWED

### 71111.01 – Adverse Weather Protection

#### Condition Reports (CR-RBS-)

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2018-04723	2018-05237	2019-00366
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#### Engineering Reports

Number	Title	Revision
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RBS-CS-15-00008	Fukushima Flooding Integrated Assessment Report	000
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RBS-SA-17-00001	2017 Focused Evaluation for External Flooding	000
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#### Procedures

Number	Title	Revision
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AOP-0029	Severe Weather Operation	040
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OSP-0070	Preparation for Mississippi River Flooding	000
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### 71111.04 – Equipment Alignment

#### Condition Reports (CR-RBS-)

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2016-06474	2017-08540	2018-01305	2018-01850	2018-02155
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2018-02517	2018-03476	2018-03786	2018-04582	2018-05038
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2018-05510	2018-05862	2019-00125	2019-01052	2019-01519
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#### Procedures

Number	Title	Revision
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AOP-0014	Loss of 125 VDC	027
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R-STM-0305	DC Distribution	006
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SOP-0030	High Pressure Core Spray	034
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SOP-0032	Low Pressure Core Spray	025
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SOP-0049	125 VDC System (Sys #305)	043
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STP-203-0201	HPCS Piping Water Fill and Valve Position Verification	308
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STP-203-6501	HPCS Pump and Valve Operability Test	012
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### 71111.05AQ – Fire Protection Annual/Quarterly

#### Calculation

Number	Title	Revision
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G13.18.12.2-022	River Bend Station Combustible Loading	005
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#### Condition Reports (CR-RBS-)

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2016-07444	2017-06932	2018-00526	2018-01736	2019-00347
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Miscellaneous Documents		
Number	Title	Revision
EN-TQ-125	Fire Brigade Drills	007
EN-TQ-125, Attachment 1	Fire Drill Scenario	007
Procedures		
Number	Title	Revision
AB-070-501	LPCS Pump Room Fire Area AB-6/Z-1	004
AB-070-506	HPCS Pump Room Fire Area AB-2/Z-1	004
AB-095-517	HPCS Piping Area Fire Area AB-2/Z-2	004
CB-116-133	Battery 1A Room Fire Area C-18	004
CB-116-134	Battery 1B Room Fire Area C-19	004
CB-116-136	HPCS Battery Room Fire Area C-21	004
RB-141-008	SLC Area Fire Area RC-4/Z-4	003
STP-000-3602	Fire Barrier Visual Inspection	017

71111.06 – Flood Protection Measures

Calculations		
Number	Title	Revision
PN-314	Moderate Energy Line Crack Flow Rates	00
PN-317	Max Flood Elevations for Moderate Energy Line Cracks in Cat I Structures	01

Drawings		
Number	Title	Revision
12210-EB-40A-7	Floor & Equipment Drainage Aux Bldg EL 70'-0" SH-1	
12210-EB-40B-9	Floor & Equipment Drainage Aux Bldg EI 70'-0" SH-2	
12210-EB-40C-5	Floor & Equipment Drainage Aux Bldg EI 95'-9" SH-3	
12210-EB-40D-7	Floor & Equipment Drainage Aux Bldg EI 95'-9" SH-4	
EE-032J	Arrangement – Manholes Plan and Details	8
PID-32-09J	Engineering P&I Diagram System 609 Drains – Floor and Equipment	22
PID-32-09K	Engineering P&I Diagram System 609 Drains – Floor and Equipment	19

Procedure		
Number	Title	Revision
EN-DC-346	Cable Reliability Program	7

Work Orders

52867111 52869316

71111.11 – Licensed Operator Regualification Program and Licensed Operator Performance

Condition Reports (CR-RBS-)

2018-00225 2018-06304	2018-01263	2018-01576	2018-01690	2018-03330
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Miscellaneous Documents

Number	Title	Revision
EIP-2-0001	User Aid 1	F
RSMS-OOPS-19-1	19-1 As Found Evaluation	1

Procedures

Number	Title	Revision
AOP-0001	Reactor Scram	37
AOP-0002	Main Turbine and Generator Trips	30
AOP-0003	Automatic Isolations	38
AOP-0005	Loss of Main Condenser Vacuum, Trip of Circulating Water Pump	26
AOP-0016	Loss of Standby Service Water	22
AOP-0017	Reactor Pressure Control Malfunctions	2
AOP-0050	Station Blackout	62
EN-OP-115	Conduct of Operations	25
EOP-0001	RPV Control	281
EOP-0002	Primary Containment Control	17
EOP-0003	Secondary Containment and Radioactive Release Control	18
EOP-0004	Contingencies	16
GOP-0002	Power Decrease/Plant Shutdown	082
GOP-0005	Power Maneuvering	330
SOP-0003	Reactor Recirculation System	315
SOP-0009	Reactor Feedwater System	079
SOP-0035	Reactor Core Isolation Cooling System	56
SOP-0053	Standby Diesel Generator and Auxiliaries	39

## 71111.12 – Maintenance Effectiveness

### Condition Reports (CR-RBS-)

2017-04898	2017-07080	2017-07111	2017-07532	2017-07983
2017-08041	2017-08048	2017-08190	2017-08529	2017-08561
2018-00170	2018-00635	2018-01002	2018-01805	2018-01982
2018-01987	2018-02314	2018-02524	2018-03780	2018-03895
2018-04275	2018-04276	2018-04751	2018-04992	2018-05603
2018-05618	2018-05698	2018-05709	2018-05752	2018-05764
2018-05854	2018-05857	2018-05866	2018-05876	2019-00034
2019-00229	2019-00732	2019-00750	2019-00826	2019-01230
2019-01246	2019-01275	2019-01362	2019-01386	2019-01422
2019-01431	2019-01437			

### Miscellaneous Document

Number	Title	Date
System Health Report: 309 and 405	Standby Emergency Diesel Generators – Division I, II, & III and HVAC	03/19/2019

### Procedures

Number	Title	Revision
EN-DC-203	Maintenance Rule Program	4
EN-DC-204	Maintenance Rule Scope and Basis	4
EN-DC-205	Maintenance Rule Monitoring	6
EN-DC-206	Maintenance Rule (a)(1) Process	3
SOP-0030	High Pressure Core Spray (Sys #203)	34
SOP-0059	Containment HVAC System (Sys #403)	38

### Work Order

00483043

## 71111.13 – Maintenance Risk Assessments and Emergent Work Control

### Condition Reports (CR-RBS-)

2019-00035	2019-00068
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### Procedures

Number	Title	Revision
ADM-0096	Risk Management Program Implementation and On-line Maintenance Risk Assessment	327
EN-OP-119	Protected Equipment Postings	010
EN-WM-104	On Line Risk Assessment	018

Procedures Number	Title	Revision
STP-207-4536	RCIC Isolation RCIC Steam Line Flow High Channel Functional Test (E31-N683A, E31-N690A, E51A-K64)	302
STP-207-4539	RCIC Isolation RCIC Steam Supply Pressure Low Channel Functional Test (E31-N685B)	301
STP-207-4549	RCIC Isolation RCIC RHR Steam Line Flow High Channel Functional Test (E31-N684B, E31-N691B)	011

Work Orders

52716192 52847802 52847803 52847804

71111.15 – Operability Determinations and Functionality Assessments

Calculation Number	Title	Revision
G13.18.14.1-037	Residual Heat Removal System Heat Exchanger Performance Guidance	0

Condition Reports (CR-RBS-)

2017-01774	2017-04636	2018-06569	2018-06683	2019-00744
2019-00868	2019-00947	2019-01265	2019-01362	2019-01386
2019-01510				

Drawings Number	Title	Revision
ESK-06HVC02	Elementary Diagram 480V Switchgear Control Room Air Handling Unit ACU2A	32
GE-793E922A	Main Steam Positive Leakage Control System	3

Miscellaneous Documents

Number	Title	Revision
0221.432-000-019	RHR Heat Exchanger Calculated Performance	1
6211.161-997-179	Glow Plug Equivalency Evaluation for Hydrogen Igniter Assembly #6043 Autolite Model 1106 vs. Autolite Model 1109 AC DELCO 7G, and 12G	1
EC-34819	Issue Calculation G13.18.14.1-037 R0, "Residual Heat Removal System Heat Exchanger Performance Guidance	0

Procedures Number	Title	Revision
EN-OP-104	Operability Determination Process	16
SOP-0040	Hydrogen Mixing, Purge, Recoiners, and Igniters	306
SOP-0059	Containment HVAC System	38
STP-000-0001	Daily Operating Logs	84
STP-000-0001	Daily Operating Logs	85
STP-208-4208	Containment System/MSIV Positive Leakage Control-Reactor-Steam Line Differential Pressure Channel Calibration Test (E33-N623, E33-R623, E33-N629, E33-N630, E33-K623)	13
STP-254-1402	Div II Hydrogen Igniter Train Current and Voltage Check	24
STP-254-1402	Div II Hydrogen Igniter Train Current and Voltage Check	26
STP-403-0301	Containment Unit Cooler HVR-UC1A Flow Rate Verification	15

Work Orders

00478283	00513411	00514664	00514722	00514723	00520091	00520586
00769860	52624439	52687133	52751160	52753000	52843654	

71111.19 – Post Maintenance Testing

Condition Reports (CR-RBS-)

2001-01031	2008-05122	2016-01725	2019-01362	2019-01386
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Miscellaneous

Document Number	Title	Revision
CEP-IST-4	Standard on Inservice Testing	309

Procedures Number	Title	Revision
EN-MA-118	Foreign Material Exclusion	15
EN-MA-141	Limatorque Valve Operator Model SMB/SB/SBD-000 Through 5 MOV and HBC Periodic Inspection	12
SOP-0037	Fire Protection Water System Operating Procedure (Sys #251)	43
SOP-0059	Containment HVAC System	38
STP-251-3205	Diesel Fire Pump Operational Test	16
STP-251-7608	FPW-P1B Fire Pump Engine Maintenance and Inspection	4
STP-403-0301	Containment Unit Cooler HVR-UC1A Flow Rate Verification	15

Work Orders

00514461	00514462	00520586	52760448	52816820	52820964	52829384
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71111.20 – Refueling and Other Outage Activities

Condition Reports (CR-RBS-)

2019-01756	2019-01792	2019-01806
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Miscellaneous Document Number

Title

Date

	Outage Risk Assessment Team RF-20 Outage Report	03/18/2019
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Procedures Number

Title

Revision

CMP-0102	Reactor Vessel Disassembly	23
EN-OU-108	Shutdown Safety Management Program (SSMP)	9
GOP-0002	Power Decrease/Plant Shutdown	082
OSP-0034	Control of Obstructions for Primary Containment/Fuel Building Operability	15
OSP-0037	Shutdown Operations Protection Plan (SOPP)	38
STP-050-0700	RCS Pressure Temperature Limits Verification	309
STP-057-3804	Containment Breach Monitoring	4

Work Order

52825116

71111.22 – Surveillance Testing

Condition Reports (CR-RBS-)

2018-02035	2018-03079	2018-03958	2018-04679	2018-05556
2018-05909	2018-06433	2018-06522	2019-00144	2019-00198
2019-00347				

Procedures Number

Title

Revision

PEP-0026	Diesel Generator Operating Logs	015
SEP-RBS-IST-1	RBS Inservice Testing Bases Document	6
SEP-RBS-IST-2	RBS Fourth Ten-Year Interval Inservice Testing Program Plan	9
SEP-RBS-IST-3	RBS Inservice Testing Cross Reference Document	6
SOP-0053	Standby Diesel Generator and Auxiliaries (SYS 309)	339

Procedures Number	Title	Revision
STP-051-4504	NSSSS-Reactor Vessel Water Level-Low Low, Level 2; Low Low Low, Level 1, Channel Functional Test (B21-N682D, B21-N681D)	301
STP-201-6310	SLC Pump and Valve Operability Test	311
STP-203-0201	HPCS Piping Water Fill and Valve Position Verification	308
STP-205-6301	LPCS Pump and Valve Operability Test	25
STP-256-0201	Division I SWP Valve Lineup Verification	304
STP-309-0201	Division I Diesel Generator Operability Test	062

Work Orders

52609386	52626891	52641960	52660045	52680119	52691959	52709560
52726046	52741308	52756900	52763675	52772829	52788501	52805284
52820064	52834274	52843518	52846504	52849069	52849071	52849859
52850921	52854285	52856057	52856492	52859581		

71114.06 – Drill Evaluation

Condition Reports (CR-RBS-)

2019-01520	2019-01583
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Miscellaneous Document Number

Title	Date
River Bend Station ERO Team "C" Site Drill Report March 12, 2019	04/10/2019

Procedures Number	Title	Revision
AOP-0001	Reactor Scram	37
AOP-0052	Fire Outside the Main Control Room in Areas Containing Safety Related Equipment	29
EIP-2-001	Classification of Emergencies	27
EN-OP-115	Conduct of Operations	26
EN-OP-200	Plant Transient Response Rules	5
EOP-0001	Emergency Operating Procedure – RPV Control	28
EOP-0002	Emergency Operating Procedure – Primary Containment Control	17
EOP-0003	Emergency Operating Procedure – Secondary Containment and Radioactive Release Control	18
EOP-0004	Emergency Operating Procedure – Contingencies	16
EOP-0005	Emergency Operating and Severe Accident Procedures Enclosures	322

71151 – Performance Indicator Verification

Miscellaneous Documents

Number	Title	Date
	Main Control Room Shift Logs	01/01/2018 – 12/31/2018

Procedure Number

Number	Title	Revision
EN-LI-114	Regulatory Performance Indicator Process	15

71152 – Problem Identification and Resolution

Condition Reports (CR-RBS-)

2018-06363	2018-06375
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Procedures Number

Number	Title	Revision
CMP-1026	MCC Circuit Breakers, Starters, and Thermal Overloads	21
EN-MA-157	Configuration Control	1
EN-WM-107	Post Maintenance Testing	1

Work Orders

00513628	00513629
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71153 – Follow-up of Events and Notices of Enforcement Discretion

Condition Report (CR-RBS-)

2018-05854
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Procedure Number

Number	Title	Revision
STP-051-4524	ECCS/RCIC-Reactor Vessel Water Level-Low Low, Level 2; Low Low Low, Level 1; Channel Functional Test (B21-N692E, B21-N691E)	5
AP-0034	Inadvertent Initiation of an ECCS System or RCIC	2



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