

## River Bend 1 4Q/2013 Plant Inspection Findings

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### Initiating Events

**Significance:** G Jun 29, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

**Failure to Establish Effective Preventive Maintenance for Components Used in High Critical Applications**

The inspectors reviewed a self-revealing finding for the failure to establish an adequate preventive maintenance strategy for the reactor feedwater regulating valves that resulted in several unplanned power changes due to packing steam leaks. In response, the station polished the pitted and scored valve stems and created a four-year periodic preventive maintenance task to replace the valve stems. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2013-00076.

The performance deficiency is more than minor because it is associated with the equipment performance attribute of the initiating events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to implement an appropriate preventive maintenance strategy resulted in multiple unplanned reactor power changes. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 1, Section B, this finding screened as very low safety significance (Green) because it was a transient initiator that did not result in both a reactor trip and loss of mitigating equipment. The most significant causal factor of the performance deficiency was over confidence with a lack of a questioning attitude concerning a flawed assumption that the engineering change had significantly increased the valves operating performance margin and solved the past operating issues with feedwater regulating valve packing leakage. No cross-cutting aspect was assigned because the station completed its decision making for the engineering change in June 2007, and these decisions are not indicative of current licensee performance.

Inspection Report# : [2013003](#) (*pdf*)

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### Mitigating Systems

**Significance:** G Dec 30, 2013

Identified By: NRC

Item Type: VIO Violation

**Failure to Resolve Noncompliances Associated with Multiple Spurious Operations in a Timely Manner**

The team identified a Green violation of 10 CFR Part 50, Appendix B, Criterion XVI for the failure to complete corrective actions associated with multiple spurious operations concerns in a timely manner. Specifically, the licensee failed to implement all of the required corrective actions for multiple spurious operations concerns prior to November 2, 2012, which marked the expiration of enforcement discretion for multiple spurious operations contained in Enforcement Guidance Memorandum 09-002. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2013-03465.

The failure to implement all of the required corrective actions for multiple spurious operations concerns in a timely manner was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since it involved multiple fire areas. The senior reactor analyst determined this finding was of very low safety significance (Green).

The finding had a cross-cutting aspect in the Work Practices component of the Human Performance area because the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety was supported [H.4(c)] (Section 1R05.01.b).

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Dec 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Alternative Shutdown Procedure**

The team identified a Green non-cited violation of Technical Specification 5.4.1.d for the failure to implement and maintain adequate written procedures covering fire protection program implementation. Specifically, the licensee failed to maintain an alternative shutdown procedure that ensured operators could safely shutdown the plant under all postulated control room fire scenarios. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2013-03150.

The failure to maintain adequate written procedures covering fire protection program implementation was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since it involved a postulated control room fire that led to control room evacuation. The senior reactor analyst determined this finding was of very low safety significance (Green).

The finding did not have a cross-cutting aspect since it was not indicative of present performance in that the performance deficiency occurred more than three years ago (Section 1R05.05.b.1).

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Dec 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Properly Calculate the Time Available for Operator Actions**

The team identified a Green non-cited violation of License Condition 2.C.(10) for the failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the licensee failed to properly calculate the amount of time available for operators to perform time critical actions for all control room fire scenarios. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2013-03472.

The failure to properly calculate the amount of time available for operators to perform time critical actions for all

control room fire scenarios was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since it involved a postulated control room fire that led to control room evacuation. The senior reactor analyst determined this finding was of very low safety significance (Green).

The finding had a cross-cutting aspect in the Decision Making component of the Human Performance area because the licensee failed to use conservative assumptions in decision making when applying the guidance for control room fires contained in the safe shutdown analysis [H.1(b)] (Section 1R05.05.b.2).

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Dec 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Maintain Communication Systems Required for Alternative Shutdown Scenarios**

The team identified a Green non-cited violation of License Condition 2.C.(10) for the failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the licensee failed to ensure that the communications systems would work under all postulated control room fire scenarios. The licensee entered this issue into their corrective action program as Condition Reports CR-RBS-2013-03243 and CR-RBS-2013-03397.

The failure to ensure that the communications systems would work under all postulated control room fire scenarios was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since it involved a postulated control room fire that led to control room evacuation. The senior reactor analyst determined this finding was of very low safety significance (Green).

The finding had a cross-cutting aspect in the Work Practices component of the Human Performance area because the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety was supported [H.4(c)] (Section 1R05.07.b).

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Dec 30, 2013

Identified By: NRC

Item Type: FIN Finding

**Failure to Implement the Engineering Change Process for Appendix R Lighting**

The team identified a Green finding for the failure to properly implement the engineering change process. Specifically, the licensee failed to update the Maintenance Rule program and perform the required preventive maintenance tasks after the addition of three 8-hour Appendix R emergency lights. During subsequent discharge testing, two of the three lights failed. The licensee entered this issue into their corrective action program as Condition Reports CR-RBS-2013-03118 and CR-RBS-2013-03273.

The failure to properly implement the engineering change process was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. The team assigned the finding a low degradation rating since the ability to reach and maintain safe shutdown conditions in the event of a control room fire would be minimally impacted by the failure of the three emergency lights to function for 8-hours. Specifically, the team determined that the alternative shutdown procedure provided operators with an alternate method of verifying that the emergency diesel generator breaker was closed. Because this finding had a low degradation rating, it screened as having very low safety significance (Green).

The finding did not have a cross-cutting aspect since it was not indicative of present performance in that the performance deficiency occurred more than three years ago (Section 1R05.08.b).

Inspection Report# : [2013007](#) (*pdf*)

**Significance:** G Jun 29, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Adequately Evaluate and Correct Degraded 125 Vdc Fused Disconnect Switches**

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, for the failure to identify and take prompt and adequate corrective actions to address a condition adverse to quality specifically related to the 125 Vdc fused disconnect switches located in the diesel generator building electrical distribution panels. The licensee addressed the underlying safety concern by cycling the disconnect switch to clean the corroded contact surfaces and performing voltage and current checks to verify circuitry operability. The licensee entered the finding into the corrective action program as Condition Report CR-RBS-2013-04247.

The inspectors determined that this finding is more than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, during a seismic event the partially seated, corroded knife blades could cause a loss of safety related 125 Vdc power to the Division 1 and 2 emergency diesel generators, reactor water recirculation pumps A and B, or Division 1 and 2 remote shutdown panels. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, this finding screened as very low safety significance (Green) because the degraded condition was not a design or qualification deficiency; did not represent an actual loss of function of a system; did not represent an actual loss of function of a single train or two separate trains for greater than its technical specification allowed outage time; did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety significant; and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Because the most significant causal factor of the performance deficiency was the licensee's failure to use consistent key words in the corrective action program to characterize the disconnect switch failures, this finding has a cross-cutting aspect in the problem identification and resolution area associated with the corrective action program component because the licensee did not periodically trend and assesses information from the corrective action program and other assessments in the aggregate to identify programmatic and common cause problems [P.1(b)].

Inspection Report# : [2013003](#) (*pdf*)

**Significance:** G Mar 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Monitor the Performance of the Floor and Equipment Drains System**

The inspectors identified a non-cited violation of 10 CFR 50.65(a)(1) associated with the licensee's failure monitor the floor and equipment drains system against licensee-established goals. The licensee failed to properly classify two maintenance preventable functional failures for this system, and as a result, inappropriately left the system in maintenance rule a(2) status. In response, the licensee properly classified the subject failures and classified the affected system into maintenance rule (a)(1) status. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2013-00295.

The failure to adequately monitor the performance of the floor and equipment drains system is a performance deficiency. The performance deficiency was more-than-minor and was therefore a finding because if left uncorrected, the failure to adequately monitor the performance of the floor and equipment drains system could lead to a more significant safety concern. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety significance in accordance with the licensee's maintenance rule program. No cross-cutting aspect was assigned because the finding does not represent current performance. Inspection Report# : [2013002](#) (*pdf*)

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## **Barrier Integrity**

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

**Significance:**  Mar 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Request Briefings of the Dose Rates in High-Radiation Areas Before Entry**

The inspectors reviewed two examples of a self-revealing, non-cited violation of Technical Specification 5.7.1 that resulted because individuals failed to request briefings of the dose rates in high-radiation areas before entry. In response, the licensee coached the involved individuals involved about the acceptable radiation work practice. The licensee entered this issue into their corrective action program as Condition Reports 2012-07643 and 2013-01275.

The failure to request briefings of the dose rates in high-radiation areas before entry was a performance deficiency. The significance of the performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the

cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because the failure exposed workers to higher than anticipated radiation dose rates. The Occupational Radiation Safety Cornerstone was affected; therefore, the inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation had a cross-cutting aspect in the human performance area, associated with the work practices component, because licensee personnel failed to use human error prevention techniques, such as self- and peer-checking, commensurate with the risk of the assigned task such that work activities were performed safely [H.4(a)].

Inspection Report# : [2013002](#) (*pdf*)

**Significance:** G Mar 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure of a Radiation Protection Technician to Provide Adequate Job Coverage**

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.7.1 that resulted because a radiation protection technician failed to provide adequate job coverage. In response, the licensee coached the involved individuals involved about the acceptable radiation work practice. The licensee entered this issue into their corrective action program as Condition Report 2013-00479.

The failure to provide adequate radiation protection job coverage was a performance deficiency. The requirement not met was Technical Specification 5.7.1. The significance of the performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because the failure exposed workers to higher than anticipated radiation dose rates. The Occupational Radiation Safety Cornerstone was affected; therefore, the inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation had a cross-cutting aspect in the human performance area, associated with the decision making component, because licensee personnel did not make a risk-significant decision using a systematic process when faced with uncertain or unexpected plant conditions [H.1 (a)].

Inspection Report# : [2013002](#) (*pdf*)

**Significance:** G Mar 30, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Failure to Provide Adequate Work Instructions for Installing Reactor Water Cleanup Pump Seals**

The inspectors reviewed a self-revealing finding associated with the licensee's failure to provide adequate instructions for installing a new seal cartridge in the reactor water cleanup 'A' pump. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2011-09015. In that condition report, the licensee developed a corrective action to revise all reactor water cleanup procedures and model work orders to verify proper installation of the pump seal.

The failure to provide adequate instructions for properly installing reactor water cleanup pump seal cartridges was a performance deficiency. The performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and affected the

cornerstone objective in that it caused increased collective radiation dose for occupational workers. Additionally, the finding was similar to example 6(i) in Appendix E to Manual Chapter 0612, "Power Reactor Inspection Reports - Examples of Minor Issues." Using Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined the finding had very low safety significance because, although the finding involved ALARA planning and work controls, the licensee's latest three-year rolling average collective dose was less than 240 person-rem. This finding had a cross-cutting aspect in the human performance area, associated with the resources component, because the licensee failed to use complete, accurate and up-to-date procedures and work orders to perform the seal installation, which resulted in unnecessary dose [H.2(c)].

Inspection Report# : [2013002](#) (pdf)

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## Public Radiation Safety

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### Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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### Miscellaneous

**Significance:** N/A Sep 13, 2013

Identified By: NRC

Item Type: FIN Finding

#### **River Bend Station 2013 Biennial Problem Identification and Resolution Inspection Summary**

The team found that licensee was generally effective at identifying problems and putting them into the corrective action program; however, there were a few instances identified during the assessment period where the licensee had missed identification of problems. The licensee was also generally effective in prioritizing the extent to which individual problems would be evaluated and in establishing schedules for implementing corrective actions. The licensee's corrective action process was generally found to be effective; however, six findings were documented during the assessment period associated with the effectiveness indicating attention to this aspect of the corrective action program may be warranted.

The licensee used industry operating experience when performing root cause and apparent cause evaluations; however, three findings were documented during the assessment period associated with the licensee's failure to institutionalize industry information and may warrant attention by the licensee. The licensee generally evaluated industry operating experience for relevance to the facility and entered applicable items in the corrective action program. The licensee performed effective quality assurance audits and self assessments, as demonstrated by self identification of poor corrective action program performance and identification of ineffective corrective actions.

Inspection Report# : [2013008](#) (*pdf*)

Last modified : February 24, 2014