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River Bend 1 – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

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Initiating Events

Significance: G Apr 28, 2017

Identified By: NRC

Item Type: VIO Violation

Failure to Obtain Prior NRC Approval for a Change in Reactor Core Isolation Cooling Injection Point

The NRC identified a Severity Level IV violation for the licensee's failure to restore compliance for a non-cited violation (NCV) associated with failure to obtain NRC approval prior to making a change to the reactor core isolation cooling injection point. Specifically, as of April 28, 2017, the licensee had not restored compliance with a violation the NRC

identified on October 8, 2015. This violation described a previously made change to the facility without prior NRC approval in violation of 10 CFR 50.59, "Changes, Tests, and Experiments." The team determined that the licensee's failure to restore compliance within a reasonable amount of time was a performance deficiency. Title 10 CFR 50, Appendix B, Criterion XVI, requires in part that, "measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected." The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2017-03505.

The finding was more than minor because it is associated with the initiating events aspect of the reactor safety cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. The finding is of very low safety significance (Green) because it 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. The finding has a human performance cross-cutting aspect associated with procedural adherence because individuals failed to follow the procedures delineated by the corrective action program [H.8]. Originally, the licensee met the criteria for dispositioning the issue (50.59) as a NCV. However, based upon the fact that the condition report, which documented the NCV, was closed without restoring compliance, the licensee no longer met the criteria for a NCV and therefore, this violation is being cited in a

notice of violation. (Section 40A2.5)

Inspection Report# : 2017009 ([pdf](#))

Significance:  Nov 08, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Create Adequate Effectiveness Review Plans for Corrective Actions to Prevent the Recurrence of Significant Performance Issues

The inspectors identified a finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to create adequate effectiveness review plans in accordance with River Bend Station Procedure EN-LI-118, "Cause Evaluation Process." Specifically, for 10 out of 22 corrective actions that were created to prevent recurrence of significant performance issues, the licensee did not have appropriate quantitative or qualitative measures of success to determine the effectiveness of correction actions. The licensee entered this issue into their corrective action program as Condition Reports CR-RBS-2016-06652 and CR-RBS-2016-06694. The licensee restored compliance by immediately preparing and approving adequate effectiveness review plans.

The inspectors determined that the performance deficiency was more than minor, and therefore a finding, because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the root cause evaluations were performed as a result of significant performance issues, and adequate effectiveness reviews are designed to ensure that corrective actions to prevent recurrence are effective in precluding the said significant performance issues. Inadequate effectiveness review plans would reasonably have the potential to prevent identifying ineffective corrective actions and allow significant performance issues to recur. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power," and Inspection Manual Chapter 0609, Appendix A, Exhibit 1, "Initiating Events Screening Questions," the inspectors determined that the finding was of very low safety significance. This finding has an evaluation cross-cutting aspect in the area of problem identification and resolution because the organization did not thoroughly evaluate the issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, when creating effectiveness review plans the licensee believed that an aggregate review was appropriate in all circumstances, resulting in the plans having inadequate measures of success [P.2]. (Section 02.04.e)

Inspection Report# : 2016012 ([pdf](#))

Mitigating Systems

Significance:  Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Follow Station Guidance on Control of Scaffolding

The inspectors identified a non-cited violation of Technical Specification 5.4, "Procedures," for the licensee's failure to follow station maintenance procedures related to the control of scaffolding in the reactor building. Specifically, the licensee installed scaffolding less than two inches from safety-related containment unit cooler HVR-UC1B without completing an engineering evaluation. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2016-07963. Corrective actions included removing the scaffolding.

The licensee's installation of scaffolding within two inches of a safety-related containment unit cooler, without completing an engineering evaluation, was a performance deficiency. 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, containment unit cooler HVR-UC1B was rendered inoperable by the incorrectly installed scaffolding and remained inoperable until the scaffolding was removed. The inspectors screened the finding in accordance with NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At Power." Using NRC Inspection Manual Chapter 0609, 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 one or more trains of safety-related equipment for greater than its technical specification allowed outage time. This finding has a cross cutting aspect in the area of human performance, avoid complacency, because the licensee failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risks, even while expecting successful outcomes. Specifically, the station failed to implement appropriate error reduction tools when it did not perform and document Procedure EN MA 133, "Control of Scaffolding," Attachments 9.5 and 9.6, which could have prevented the scaffolding construction error [H.12].

Inspection Report# : 2017001 (*pdf*)

Significance: G Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Properly Pre-Plan and Perform Maintenance on the Control Building Chilled Water System

The inspectors identified a non-cited violation of Technical Specification 5.4, "Procedures," for the licensee's failure to properly pre-plan and perform maintenance on safety-related components in accordance with documented instructions appropriate to the circumstances. Specifically, the licensee used work order instructions that did not contain sufficient detail for the reassembly of SWP-PVY32C, a safety-related valve in the control building ventilation system. As a result, SWP-PVY32C developed a refrigerant leak, and on November 17, 2015, the valve failed. This in turn caused the control building ventilation system to fail, and the high pressure core spray system was consequently declared inoperable. The licensee entered this condition into their corrective action program as Condition Report CR-RBS-2017-02364. Corrective actions included incorporating the torque values into the model work order instructions for future maintenance and reassembly.

The failure to properly pre-plan and perform maintenance on safety-related components in accordance with documented instructions was a performance deficiency. 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, when the control building ventilation system failed, it impacted the operability of the high pressure core spray system. The inspectors screened the finding in accordance with NRC Inspection Manual Chapter 0609, "Significance Determination Process." Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At Power," Exhibit 2 - "Mitigating Systems Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because it did not affect the design or qualification of a mitigating structure, system, or component (and the structure, system, or component maintained its operability), it did not represent a loss of safety function, it did not represent an actual loss of function of at least a single train for greater than its technical specification outage time, and it 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. This finding has a cross-cutting aspect in the area of human performance, challenge the unknown, because individuals did not stop when faced with uncertain conditions. Specifically, workers proceeded with assembling the valve when the torque values or torquing sequence were not specified [H.11]. (Section 4OA3.1)

Inspection Report# : 2017001 (*pdf*)

Significance:  Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Enter Applicable Technical Specification Action Statements When Control Building Chillers Were Out of Service

The inspectors identified a non-cited violation of Technical Specifications 3.8.4, "DC Sources - Operating," 3.8.7, "Inverters - Operating," and 3.8.9, "Distribution Systems - Operating," for the licensee's failure to either restore inoperable electrical power subsystems, inverters, and distribution subsystems to operable status within the applicable completion times, or be in Mode 3 in 12 hours and Mode 4 in 36 hours. Specifically, electrical power systems required by the above limiting conditions for operation were inoperable due to the associated division of the control building chilled water system chillers being out of service and therefore unavailable to provide the technical specification support function of attendant cooling that is needed for the associated electrical systems to perform their specified safety functions. As a result of this deficiency, the station reduced the reliability and availability of systems cooled by control building chilled water system chillers by allowing configurations that did not conform to the single failure criterion. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2015-02525. Corrective actions included entering the appropriate limiting conditions for operation of affected safety-related systems when the non-safety related support system were non-functional.

The failure to either restore inoperable electrical power subsystems, inverters, and distribution subsystems to operable status within the applicable completion times, or be in Mode 3 in 12 hours and Mode 4 in 36 hours was a performance deficiency. Specifically, electrical power systems required by the above limiting conditions for operation were inoperable due to the associated division of the control building chilled water system chillers being out of service and therefore unavailable to provide the technical specification support function of attendant cooling that is needed for the associated electrical systems to perform their specified safety functions. The performance deficiency was more than minor, and therefore a finding, because it was associated with the configuration control attribute of the Mitigating Systems Cornerstone, and adversely affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. As a result of this deficiency, the station reduced the reliability and availability of systems cooled by control building chilled water system chillers by allowing configurations that did not conform to the single failure criterion. The inspectors performed an initial screening of the finding in accordance with NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was determined to require a detailed risk evaluation because it represented a loss of system and/or function. A senior reactor analyst performed a detailed risk evaluation for a previously identified performance deficiency associated with the licensee's failure to account for a loss of all control building chilled water system cooling scenario, either quantitatively or qualitatively, which resulted in uncompensated impairment to all systems associated with the main control room (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16132A144). This previously performed detailed risk evaluation bounds the risk associated with the finding dispositioned in this write-up: the failure to either restore inoperable electrical power subsystems, inverters, and distribution subsystems to operable status within the applicable completion times, or be in Mode 3 in 12 hours and Mode 4 in 36 hours. Therefore, the finding was determined to be of very low safety significance (Green). No cross cutting aspect was assigned as the performance deficiency is not indicative of current licensee performance. (Section 40A5.2)

Inspection Report# : 2017001 (*pdf*)

Significance:  Oct 12, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Plant Operating Procedures with Ten Examples

The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for ten examples of failing to provide appropriate qualitative and quantitative criteria in alarm response procedures, and abnormal operating procedures. The licensee is currently evaluating the scope of these and other procedural inadequacies. These procedure deficiencies were entered into the licensee's corrective action program as Condition Report CR-RBS-2016-06683.

The failure of these ten procedures to have the appropriate qualitative and quantitative criteria to complete these activities was a performance deficiency. The finding was more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring availability, reliability, and capability of systems needed to respond to initiating events to prevent undesired consequences. Specifically, inadequate procedures could adversely affect the operating crew's ability to take appropriate actions to ensure reactor safety is being maintained. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, the team determined that the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and 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 their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program for greater than 24 hours. The finding has a cross-cutting aspect in the area of human performance associated with documentation because the organization did not maintain complete, accurate, and up-to-date documentation for procedure writing and modification [H.7].

Inspection Report# : 2016301 (*pdf*)

Significance:  Sep 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Design and Extent of Condition Review Leaves Circuit Breaker Failure Mechanism Uncorrected

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 receiving a vendor nonconformance report identifying a failure-to-close vulnerability in Masterpact circuit breakers, the licensee failed to fully diagnose the extent of the vulnerability and take actions to correct the adverse impacts on safety-related plant systems. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2016-01702 and Condition Report CR-RBS-2016-03637. Corrective actions included implementing modifications to affected Masterpact circuit breakers.

The failure to fully evaluate and correct binding vulnerabilities in Masterpact circuit breakers was a performance deficiency. 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, the licensee's failure to appropriately resolve binding vulnerabilities in Masterpact circuit breakers adversely affected the availability, reliability, and capability of emergency diesel generators, standby gas treatment fans, auxiliary building unit coolers, and containment unit coolers. The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions." The finding required a detailed risk evaluation because it involved a loss of system and/or function. A Region IV senior reactor analyst performed a detailed risk evaluation for the issue and determined the issue to be of very low safety significance (Green). The finding had a cross-cutting aspect in the area of

problem identification and resolution, evaluation, because the licensee failed to thoroughly evaluate an issue to ensure that the resolution addressed causes and extent of conditions commensurate with their safety significance [P.2].

Inspection Report# : 2016003 (*pdf*)

Significance: G Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Establish Criteria for Alternating Control Building Chilled Water System Chillers

The inspectors reviewed two examples of a self-revealing, non-cited violation of Technical Specification 5.4, "Procedures," for the licensee's failure to establish adequate instructions in the control building chilled water system operating procedures. The procedures for operating the control building chilled water system did not establish limits on oil level as a prompt to swap chillers. As a result, station personnel did not take action to swap chillers, which resulted in a trip of the in-service control building chiller. The licensee entered these issues into their corrective action program as Condition Reports CR-RBS-2015-08834 and CR-RBS-2016-03361. Corrective actions included initiating a standing order to provide guidance on monitoring oil levels and direction to alternate operating chillers.

The failure to establish limits on oil level as a prompt to swap control building chillers in quality related system operating Procedure SOP-0066, "Control Building HVAC Chilled Water System," Revision 328, was a performance deficiency. 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, the failure to alternate operating chillers on December 10, 2015, and again on May 2, 2016, upon the observance of rising oil level in the sight glass, resulted in a trip of control building chilled water system chillers 1D and 1C, respectively, and unplanned inoperability and limiting condition for operation entries for multiple safety-related systems. The inspectors screened the finding in accordance with NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined this finding to be of very low safety significance (Green) because the finding did not represent an actual loss of function of one or more trains of safety-related equipment for greater than its technical specification allowed outage time. The finding had a cross-cutting aspect in the area of problem identification and resolution, operating experience, because the licensee failed to systematically and effectively collect, evaluate, and implement relevant internal and external operating experience in a timely manner. Specifically, the station had previously identified in Condition Report CR-RBS-2006-04291 that the oil phenomenon was the cause of control building chilled water system chiller trips [P.5].

Inspection Report# : 2016003 (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security

inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : August 03, 2017

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