

River Bend 1 2Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Apr 14, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Follow Procedure While Installing Jumpers for Shutdown Cooling

The team reviewed a self-revealing, non-cited violation of Technical Specification 5.4, "Procedures," for the licensee's failure to correctly implement Procedure SOP-0031, "Residual Heat Removal System," Revision 326. SOP-0031, Attachment 5, Step 5.4.1, required that a retractable sheathed banana jumper be used when bypassing the 135-psi SDC isolation. Instead, the licensee used a standard banana jumper, which resulted in a short circuit and inadvertent closure of Valves E12MOV-F008, Shutdown Cooling Suction Valve, and E12MOV-F053A, Shutdown Cooling Injection Valve. This caused a loss of decay heat removal. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2016-0210. Corrective actions included revising Procedure SOP-0031 to include actions to de-energize the applicable valves while bypassing the 135-psi shutdown cooling isolation.

The failure to use the correct jumpers as specified in Procedure SOP-0031 was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is 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, the shorting of contacts resulting from the use of incorrect jumpers caused a loss of shutdown cooling and decay heat removal. The team evaluated the finding using NRC Inspection Manual Chapter 0609, Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Screening and Characterization of Findings." When applying "Exhibit 2 - Initiating Events Screening Questions," the team determined the loss of residual heat removal event did not occur when the refuel cavity was flooded, and therefore it required a risk evaluation using the Appendix G, Attachment 3, "Phase 2 Significance Determination Process Template for Boiling Water Reactors during Shutdown." The analyst determined that a modified but still conservative Phase 2 quantitative estimate in combination with qualitative and deterministic insights led to a final conclusion that the finding was of very low safety significance (Green).

The finding has a field presence cross-cutting aspect within the human performance area because the licensee failed to promptly correct deviations from standards and expectations. Specifically, the licensee failed to correct deviations from standards and expectations during the performance of the pre-job brief and ensure proper communication and oversight is maintained in the control room during risk significant evolutions [H.2]. (Section 2.11.a)

Inspection Report# : [2016009](#) (*pdf*)

Significance: G Apr 14, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Implement Corrective Actions to Prevent the Recurrence of a Reactor Scram Due to Grid Disturbances

The team reviewed a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective

Action,” for the licensee’s failure to establish measures to assure that corrective action is taken to preclude repetition of a significant condition adverse to quality. Specifically, following a November 27, 2015, reactor scram, the licensee failed to implement corrective actions associated with the alternate power lineup of the reactor protection system buses to preclude repetition of a significant condition adverse to quality during the January 9, 2016, reactor scram. This issue was entered into the licensee’s corrective action program as Condition Report CR-RBS-2016-0180. Corrective actions included supplying reactor protection system bus A from the normal power source on January 12, 2016.

The failure to assure corrective actions are promptly taken for a significant condition adverse to quality to preclude repetition of a reactor scram associated with both buses being affected by a switchyard voltage transient was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is 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, the licensee’s failed to implement corrective actions to address grid instabilities following the November 27, 2015, reactor scram to preclude the January 9, 2016, reactor scram. The team 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 Inspection Manual Chapter 0609, Appendix A, the team determined that this finding is of very low safety significance (Green) because it did not involve the loss of mitigation equipment or a support system.

This finding has an evaluation cross-cutting aspect within the problem identification and resolution area because the licensee failed to thoroughly evaluate the cause of the November 27, 2015, reactor scram and ensure that the resolution addresses causes and extent of conditions commensurate with their safety significance [P.2].

(Section 2.11.c)

Inspection Report# : [2016009](#) (*pdf*)

Significance:  Apr 14, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Assess Risk During Motor Generator Set Unavailability

The team identified a non-cited violation of 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” for the licensee’s failure to adequately assess the increase in risk that may result from proposed maintenance activities. Specifically, the team identified that since 2012, the licensee failed to adequately assess the risk of simultaneously powering both reactor protection system buses from the alternate power sources, which resulted in an increased risk of a reactor scram due to grid instabilities. This issue was entered into the licensee’s corrective action program as Condition Report CR-RBS-2016-3176. Corrective actions included revising Procedure SOP-0079, “Reactor Protection System,” to include precautions to address the increased risk associated with supplying both reactor protection system buses from the alternate power source.

The team determined that the licensee’s failure to adequately assess the increase in risk associated with simultaneously powering both reactor protection system buses from the alternate power sources was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is associated with the design control 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 performance deficiency resulted in an increased risk of a reactor scram due to grid instabilities. The team 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 Inspection Manual Chapter 0609, Appendix A, Exhibit 1, “Initiating Events Screening Questions,” a detailed risk evaluation was required since the finding resulted in a reactor scram and main steam isolation valve closure. The finding was evaluated using Inspection Manual Chapter 0609, Appendix K, “Maintenance Risk Assessment and Risk

Management Significance Determination Process,” Flowchart 1, “Assessment of Risk Deficit,” dated May 19, 2005, to assess the significance of the finding. A senior reactor analyst estimated the incremental core damage probability deficit to be 2.0E-7 and the incremental large early release probability deficit to be 4.0E-8. Since this incremental core damage probability deficit was less than 1E-6 and the incremental large early release probability deficit was less than 1E-7, the analyst used Flowchart 1 to determine the finding was of very low safety significance (Green).

This finding has a conservative bias cross-cutting aspect within human performance area because the licensee determined that powering both reactor protection system buses from the alternate source instead of the motor generator sets was safe even though the motor generator sets are the preferred source and provide protection against grid perturbations [H.14]. (Section 2.11.d)

Inspection Report# : [2016009](#) (*pdf*)

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Ensure Work Hours are Within Work Hour Limits

The inspectors identified a non-cited violation of 10 CFR Part 26, “Fitness for Duty Programs,” for the licensee’s failure to ensure that the calculated hours for individuals subject to work hour controls included all time performing duties for the licensee. Specifically, from November 1, 2015, to December 15, 2015, the licensee’s failure to accurately calculate work hours resulted in an individual exceeding work hour limits. The licensee entered this condition into their corrective action program as Condition Report CR-RBS-2015-09152. The licensee restored compliance when the affected individual received an adequate break time. Corrective actions included training operators on required work hours tracking as required by procedure EN-OM-123, “Fatigue Management Program,” Revision 12.

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, the failure to schedule and control work hours for individuals subject to work hour controls could reasonably result in human performance errors that could cause a plant event to occur or complicate the station’s ability to respond appropriately to an event. The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Appendix G, Attachment 1, “Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings.” The inspectors determined that the finding was of very low safety significance (Green) because the finding did not cause any known effects to plant safety caused by worker fatigue. The finding had a cross-cutting aspect in the area of human performance associated with procedure adherence because the licensee failed to follow fatigue management program procedure EN-OM-123, “Fatigue Management Program,” Revision 12, which required the licensee to track all work hours subject to the work hour limits [H.8].

Inspection Report# : [2015004](#) (*pdf*)

Significance:  Dec 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Follow Procedure Results in Inadvertent Draindown of Reactor Pressure Vessel

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4, “Procedures,” for the licensee’s failure to correctly implement procedure STP-200-0605, “Remote Shutdown System Control Circuit Operability Test,” Revision 307. The procedure was incorrectly performed leading to an unexpected configuration in which the reactor pressure vessel was aligned to the suppression pool, and approximately 360 gallons of reactor coolant were inadvertently transferred to the suppression pool. The licensee entered this issue into their corrective

action program as Condition Report CR-RBS-2015-02354. The licensee restored compliance by restoring the system to a configuration that was consistent with plant operating procedures. Corrective actions included increased management oversight of remote shutdown system operation.

The performance deficiency was more than minor, and therefore a finding, because it was associated with the Initiating Events Cornerstone attribute of configuration control, and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, a loss of reactor pressure vessel inventory occurred due to the establishment of an unintended system configuration caused by the inadvertent repositioning of the reactor pressure vessel suction valve. The inspectors initially screened the finding in accordance with NRC Inspection Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process." Using Exhibit 2 of NRC Inspection Manual Chapter 0609, Appendix G, Attachment 1, "Phase 1 Initial Screening and Characterization of Findings," the inspectors determined that the finding required a Phase 2 evaluation because the loss of inventory resulted in leakage to the suppression pool that if undetected or unmitigated in 24 hours or less would cause shutdown cooling to isolate. A Region IV senior reactor analyst performed a Phase 2 evaluation of this issue and determined the issue was of very low safety significance (Green) and represented a change to the core damage frequency of 3.8E-8/year. The event sequence was an actual loss of inventory which occurred after core refueling in the shutdown. Risk was mitigated by prompt operator recovery action to stop the loss of inventory along with the operating plant configuration, which had two residual heat removal pumps aligned for automatic injection, one control rod drive pump in operation at the time of the event, and all manual injection paths fully available to mitigate the event. This finding has a cross-cutting aspect in the area of human performance associated with avoid complacency because the licensee failed to ensure that individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes [H.12].

Inspection Report# : [2015004](#) (pdf)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Operate the Unit 1 Feedwater System in Accordance With Procedures

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a for the licensee's failure to implement a procedure required by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Specifically, System Operating Procedure SOP-0009, "Reactor Feedwater System," Revision 63, which is required by Regulatory Guide 1.33, requires the licensee to limit the position of the feedwater regulating valves to less than or equal to 92 percent open to allow for adequate margin to respond to an increase in steam flow while maintaining reactor vessel water level. Contrary to this, on December 12, 2014 while raising reactor power, the licensee failed to maintain the feedwater regulating valves less than or equal to 92 percent open resulting in a steam flow and feedwater flow mismatch and lowering reactor vessel water level, which caused a recirculation flow control valve runback. The crew responded to the runback using approved procedures and restored reactor vessel water level to the correct operating band. This issue was entered in the licensee's corrective action program as Condition Report CR-RBS-2014-6357.

This performance deficiency is more than minor, and therefore a finding, because it is 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, the licensee failed to maintain feedwater regulating valves less than or equal to 92 percent open while raising reactor power, which resulted in an unplanned transient when plant systems automatically initiated a recirculation flow control valve runback in response to low reactor vessel water level. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Inspection Manual Chapter 0609, Appendix A, Exhibit 1, "Initiating Events Screening Questions," the inspectors determined that 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, high energy line-breaks, internal flooding, or fire. This finding has an avoid complacency cross-cutting aspect within the human performance area because the licensee failed to perform a thorough review of the activity every time the work was performed rather than relying on past successes and assumed conditions. Specifically, the control room operators relied on past experiences rather than following a written procedure [H.12].

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Jul 02, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Preclude Repetition of Consequential Gaps in Operator Performance

The team identified a Green non-cited violation of 10 CFR Part 50 Appendix B Criterion XVI, “Corrective Action,” for the licensee’s failure to preclude repetition of consequential gaps in operator performance. In August 2013, the licensee identified that gaps in operator fundamentals, a significant condition adverse to quality, had caused or contributed to plant transients earlier that year. The licensee’s corrective actions were inadequate to prevent gaps in operator fundamentals from again causing or contributing to plant transients in late 2014.

The failure to correct and preclude repetition of consequential gaps in operator fundamentals, a significant condition adverse to quality, as required by 10 CFR Part 50 Appendix B Criterion XVI, was a performance deficiency. This performance deficiency was more than minor because it affected the human performance attribute of the initiating events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety function. Using Inspection Manual Chapter 0609 Appendix A, the team determined that this finding was of very low safety significance (Green) because it did not involve the loss of mitigation equipment or a support system. This finding has a field presence cross-cutting aspect in the human performance cross-cutting area (H.2) because leaders failed to provide oversight of work activities and to promptly correct deviations from standards and expectations.

Inspection Report# : [2015008](#) (*pdf*)

Significance:  Jul 02, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Identify an Adverse Trend in the Performance of Post Maintenance Testing on High Critical Components

The team identified a Green non-cited violation of 10 CFR Part 50 Appendix B Criterion XVI, “Corrective Action,” for the failure to identify and correct a condition adverse to quality. Specifically, the licensee failed to identify an adverse trend in the performance of post maintenance testing on high critical components. The licensee did not identify a trend or evaluate whether multiple equipment or component failures that in some instances complicated and challenged operators response to a scram was related to maintenance work performed, and if there was an opportunity to identify the issues through post maintenance testing prior to returning equipment to service.

The licensee’s failure to promptly identify and correct a condition adverse to quality, as required by 10 CFR Part 50 Appendix B Criterion XVI, was a performance deficiency. The licensee failed to identify an adverse trend in the performance of post-maintenance testing on high-critical components. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment performance attribute of the initiating event 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, the failure to identify a programmatic trend that reduced the reliability of multiple high-critical components whose failure could result in a significant impact to safe and reliable plant operation. Using Inspection Manual Chapter 0609, Appendix A, the team determined that this finding was of very low safety significance (Green) because it did not involve the loss of mitigation equipment or a support system. The finding has a human performance cross-cutting aspect associated with

resources, in that the licensee leaders failed to ensure that personnel, equipment, procedures, and resources are available and adequate to support nuclear safety (H.1). Specifically, the licensee failed to evaluate a trend in degraded critical component conditions or malfunctions for multiple high critical components.

Inspection Report# : [2015008](#) (*pdf*)

Mitigating Systems

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Follow Station Guidance on Use of Temporary Power Cables and Control of Transient Combustibles

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

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

Inspection Report# : [2016002](#) (*pdf*)

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Conduct Common Cause Failure Evaluation in Response to Inoperable Emergency Diesel Generator

The inspectors identified a non-cited violation of Technical Specification 3.8.1, "AC Sources – Operating," for the licensee's failure to take required actions for an inoperable emergency diesel generator. Specifically, after classifying the Division I emergency diesel generator as inoperable on the basis of a nonconforming condition discovered during an extended maintenance outage, and after failing to either verify that the Division II emergency diesel generator was

not inoperable due to common cause failure within 24 hours or conduct a surveillance run on the Division II emergency diesel generator within 24 hours, the licensee failed to enter Mode 3 within 12 hours, as required by Actions C.3.1, C.3.2, and G.1 of Technical Specification 3.8.1, respectively. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2016-03978. Corrective actions included the scheduling of training to ensure that operations personnel fully understand the technical specification requirements for common cause evaluation as they relate to adverse conditions on emergency diesel generators.

The failure to take required actions for an inoperable emergency diesel generator was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment reliability attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to follow technical specification requirements to ensure the availability, reliability, and capability of the operable emergency diesel generator directly affected the cornerstone objective. Using NRC Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Exhibit 2 -- Mitigating Systems Screening Questions," the inspectors determined the finding to be of very low safety significance (Green) because the finding did not represent an actual loss of function of the Division II emergency diesel generator. The finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee failed to use a consistent, systematic approach to make decisions. Specifically, the licensee failed to review the required actions of the applicable technical specification so as to ensure that all of those actions would be properly carried out [H.13].
Inspection Report# : [2016002](#) (*pdf*)

Significance: G Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Identify and Correct Improperly Stowed Transient Combustibles

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

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

The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings." Since the finding involved a failure to adequately implement fire prevention and administrative controls for transient combustibles, the inspectors dispositioned the finding using NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." In accordance with Manual Chapter 0609, Appendix F, Question 1.3.1.A, the inspectors determined that the finding was of very low safety significance (Green) because the reactor would be able to reach and maintain safe shutdown since the safe shutdown path was deemed independent of fire damage state scenarios for the given fire ignition source. The finding

had a cross-cutting aspect in the area of human performance, teamwork, because the licensee failed to properly communicate expectations to individuals performing work during the course of implementing corrective actions [H.4].
Inspection Report# : [2016002](#) (*pdf*)

Significance:  Apr 29, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Loop Flow Test Procedure

The team identified a non-cited violation of License Condition 2.C.(10) for the failure to implement and maintain in effect all provisions of their approved fire protection program. Specifically, the licensee's fire protection program surveillance testing procedure for the fire main yard loop did not include appropriate guidance to properly flow test all portions of the underground fire main yard loop to buildings that contained fire safe shutdown equipment. The licensee entered this deficiency into their corrective action program as Condition Report CR-RBS-2016 03212 and initiated actions to correct the procedure and perform the flow testing.

The failure to ensure that fire protection program Surveillance Test Procedure STP 251 3700, "Fire System Yard Water Suppression Loop Flow Test," Revision 10, included requirements to functionally test all individual underground firewater flow paths to structures that contained fire safe shutdown components was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external factors (fire) attribute of the Mitigating Systems Cornerstone and adversely affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was screened in accordance with NRC Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," dated June 19, 2012. The team determined that an Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, review was required because the finding affected the fire water supply system. Using Inspection Manual Chapter 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," dated September 20, 2013, the finding was screened as a Green finding of very low safety significance in accordance with Task 1.4.7, "Fire Water Supply," Question A. Since the subject fire main yard loops had not been flow tested since initial testing, and nothing caused the licensee to reevaluate the testing procedure, the team determined that this failure did not reflect current performance, and no cross-cutting aspect was assigned. (Section 1R05.03.b)

Inspection Report# : [2016007](#) (*pdf*)

Significance:  Apr 29, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Isolate Control Circuits for Safe Shutdown Equipment from the Effects of a Control Room Fire

The team identified a 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 team identified two examples where the licensee failed to isolate control circuits for safe shutdown equipment to ensure independence from the effects of a fire in the control room. As immediate compensatory measures the licensee performed visual inspections of the affected cabinets for unacceptable fire hazards and issued Standing Order 323 to reinforce the need for operators to identify and prevent fire hazards while in the control room. The licensee entered this issue into their corrective action program as Condition Reports CR-RBS-2016 02953 and CR-RBS-2016-03264.

The failure to isolate control circuits for safe shutdown equipment from the effects of a control room fire 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 Mitigating Systems 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 and determined the issue was of very low safety significance (Green). This 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 1R05.06.b)

Inspection Report# : [2016007](#) (*pdf*)

Significance:  Apr 29, 2016

Identified By: NRC

Item Type: FIN Finding

Failure to Demonstrate that Appendix R Emergency Lights Satisfied their Maintenance Rule Performance Criteria

The team identified a finding for the failure to provide an adequate monitoring and testing program to demonstrate that the required Appendix R emergency lights satisfied the licensee’s maintenance rule performance criteria. Specifically, the failure to provide an adequate monitoring and testing program could result in a large number of Appendix R emergency lights failing to last the required 8 hours without being detected. The team determined that, because the licensee had changed their program to a biennial replacement frequency for the 8-hour batteries, reasonable assurance existed that the lights would function long enough for operators to perform the time critical manual actions directed by their fire protection program. The licensee entered this finding into their corrective action program as Condition Report CR-RBS-2016-03177.

The failure to establish an adequate monitoring and testing program to demonstrate that the required Appendix R emergency lights would satisfy the licensee’s maintenance rule performance criteria was a performance deficiency. The performance deficiency was more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, the failure to provide an adequate monitoring and testing program could result in a large number of Appendix R emergency lights failing to function for the required 8 hours without being detected through licensee monitoring and testing. The team determined this finding affected the Mitigating Systems Cornerstone. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” dated February 28, 2005, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. The team assigned the finding to the post-fire safe shutdown category since it impacted the remote shutdown and control room abandonment element. 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 potential failure of the emergency lights to function for 8-hours. Because this finding had a low degradation rating, it screened as having very low safety significance (Green) in Task 1.3.1. 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. Specifically, the licensee began performing the 8-hour discharge test on a small sample of the batteries more than three years ago. (Section 1R05.08.b)

Inspection Report# : [2016007](#) (*pdf*)

Significance:  Apr 14, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Establish Adequate Procedural Guidance

The team reviewed a self-revealing, non-cited violation of Technical Specification 5.4, “Procedures,” for three examples of the licensee’s failure to establish sufficient procedural guidance. Specifically, the licensee’s operations and radiation protection procedures did not provide sufficient direction to plant personnel to expeditiously establish a reactor vessel vent path, restore from a loss of shutdown cooling, and perform time sensitive entries into

radiologically controlled areas. This issue was entered into the licensee’s corrective action program as Condition Reports CR-RBS-2016-0210, CR-RBS-2016-0370, and CR-HQN-2016-0132. Corrective actions included revising the applicable procedures.

The failure to establish adequate procedural guidance in accordance with Regulatory Guide 1.33 was a performance deficiency. Specifically, Procedures GOP-0002, “Power Decrease/Plant Shutdown,” Revision 72, and AOP-0051, “Loss of Decay Heat Removal,” Revision 313, failed to provide adequate direction to operations personnel to expeditiously establish a reactor vessel vent path and recover shutdown cooling following an isolation. Additionally, Procedure EN-RP-101, “Access Control for Radiologically Controlled Areas,” Revision 11, failed to provide adequate guidance to perform time sensitive entries into radiologically controlled areas. This performance deficiency is more than minor, and therefore a finding, because it is associated with the procedure quality 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 failed to ensure that adequate procedural direction was provided to operations personnel following a loss of shutdown cooling. This resulted in a delay in the restoration of shutdown cooling and plant heatup. The team performed an initial screening of the finding in accordance with NRC Inspection Manual Chapter 0609, Appendix G, “Shutdown Operations Significance Determination Process.” Using Inspection Manual Chapter 0609, Appendix G, Attachment 1, Exhibit 3, “Mitigating Systems Screening Questions,” the team determined that the finding is of very low safety significance (Green) because it: (1) affected the design or qualification of a mitigating structure, system, or component, and (2) the structure, system, or component maintained its operability and functionality. A cross-cutting aspect is not being assigned to this finding due to the timing of the performance deficiency not being indicative of current licensee performance. (Section 2.11.b)

Inspection Report# : [2016009](#) (pdf)



Significance: Jan 20, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Assess Risk During Chiller Unavailability

NRC INSPECTION REPORT 05000458/2016008 - FINAL SIGNIFICANCE DETERMINATION OF GREEN FINDING

The preliminary significance was estimated to be White. After reviewing new information provided during the April 4, 2016, Regulatory Conference, the significance is now estimated to be Green.

After considering information presented at the Regulatory Conference conducted April 4, 2016, a Region IV senior reactor analyst performed a final detailed risk evaluation. See Attachment 3 of this report, “Final Detailed Risk Evaluation,” for further information. This evaluation yielded a maximum incremental core damage probability deficit of 3.2E-7. The analyst applied this result to Flowchart 1, “Assessment of Risk Deficit,” of Appendix K, “Maintenance Risk Assessment and Risk Management Significance Determination Process,” of Manual Chapter 0609. In applying Flowchart 1, the analyst determined that because the maximum incremental core damage probability deficit was less than 1.0E-6, the finding was of very low safety significance (Green).

The NRC identified an apparent violation of 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” paragraph (a)(4) with preliminary white significance.

Prior to March 30, 2015, before performing maintenance activities, the licensee failed to adequately assess the increase in risk that may result from proposed maintenance activities. Specifically, the risk assessment performed by

the licensee for plant maintenance failed to account for certain safety significant structures, systems, and components that were concurrently out of service. On multiple occasions, the licensee failed to adequately assess the risk of operating the control building chilled water system (HVK) chillers in various single-failure vulnerable configurations. As a result of this deficiency, the station reduced the reliability and availability of systems contained in the main control room and failed to account for the significant, uncompensated impairment of the safety functions of the associated systems. In response to the NRC's conclusions, the licensee initiated Condition Report CR-RBS-2016-00095. The licensee also completed engineering analyses to evaluate alternate cooling methods, including cross-connecting service water and the HVK chiller systems, in order to provide cooling to spaces housing electrical components.

This performance deficiency is more than minor, and therefore a finding, because it is 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. Specifically, the licensee's failure to account for a loss of all HVK cooling scenario, either quantitatively or qualitatively, resulted in uncompensated impairment to all systems associated within the main control room. A loss of cooling to the control room could lead to multiple systems exceeding their equipment qualification temperatures and impact control room habitability. The finding was evaluated using Inspection Manual Chapter (IMC) 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." Using Inspection Manual Chapter 0609, Appendix K, the finding was determined to require additional NRC management review using risk insights where possible because the quantitative probabilistic risk assessment (PRA) tools are not well suited to analyze failures from control room heat-up events. Thus, the analyst evaluated the safety significance posed by the heat-up of components cooled by the HVK chillers using Appendix K, Flowchart 1, "Assessment of Risk Deficit," to the extent practical, with additional risk insights by internal NRC management review in accordance with Inspection Manual Chapter 0612, "Power Reactor Inspection Reports." The significance of the finding was preliminarily determined to be White. The team determined the most significant contributing cause of the licensee failing to adequately assess the increase in risk from proposed maintenance activities was inadequate procedural guidance in Procedure ADM-0096, "Risk Management Program Implementation and On-line Maintenance Risk Assessment," Revision 316. This finding has a resources cross-cutting aspect within the human performance area because leaders failed to ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety [H.1].

Inspection Report# : [2015010](#) (pdf)

Inspection Report# : [2016008](#) (pdf)

Significance:  Jan 20, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Identify and Correct Circuit Breakers Failure Mechanism

The team reviewed a self-revealing 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 related to Masterpact circuit breakers. Specifically, the licensee did not promptly identify and correct a Masterpact breaker failure mechanism, even though related industry operating experience was available. The licensee determined the failure mechanism caused nine breaker failures since 2007, and may have contributed to an additional six failures where the cause was not conclusively determined. In response to the NRC's conclusions, the licensee initiated Condition Report CR-RBS-2015-03951. Further, the licensee modified all vulnerable Masterpact circuit breakers to remove this failure mechanism.

This performance deficiency is more than minor, and therefore a finding, because it is 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 untimely corrective action contributed to additional failures of Masterpact

circuit breakers and decreased the reliability of Masterpact circuit breakers to respond during design basis events. The team 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 Inspection Manual Chapter 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” the finding was of very low safety significance (Green) because it: (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 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-significant in accordance with the licensee’s maintenance rule program. This finding has an operating experience cross-cutting aspect within the problem identification and resolution area because the licensee failed to systematically and effectively collect, evaluate, and implement relevant internal and external operating experience in a timely manner [P.5].

Inspection Report# : [2015010](#) (*pdf*)

Significance:  Jan 20, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Accomplish an Operability Determination In Accordance With Procedures

The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the licensee’s failure to accomplish an operability determination in accordance with procedure EN-OP-104, “Operability Determination Process,” Revision 8. Specifically, the licensee referenced non-conservative data, contrary to steps 5.5 and 5.11 of procedure EN-OP-104, when assessing the reduced reliability of Masterpact circuit breakers as a degraded or nonconforming condition. The licensee restored compliance by completing a design modification to eliminate the failure mode and initiated Condition Report CR-RBS-2015-03952.

This performance deficiency is more than minor, and therefore a finding, because it is 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 reliability of components powered by Masterpact circuit breakers was reduced and, by justifying operability using non-conservative data, the licensee did not recognize the actual unreliability. The team 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 Inspection Manual Chapter 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” the finding was of very low safety significance (Green) because it: (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 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-significant in accordance with the licensee’s maintenance rule program. This finding has a conservative bias cross-cutting aspect within the human performance area because the licensee failed to use decision-making practices that emphasize prudent choices over those that are simply allowable. Specifically, the licensee did not consider that the failure mechanism only occurs on a close command. Instead, the licensee included opening commands when summing the total demands and this resulted in a non-conservative failure rate [H.14].

Inspection Report# : [2015010](#) (*pdf*)

Significance:  Jan 20, 2016

Identified By: NRC

Item Type: FIN Finding

Failure to Identify and Correct an Adverse Condition in a Timely Manner

The team identified a finding for the licensee's failure to identify and correct an adverse condition in a timely manner as required by plant procedures. Specifically, the licensee did not recognize degrading trends associated with incorrect racking of Magne Blast circuit breakers and failures of the Magne Blast circuit breaker for the Reactor Feed Water Pump Motor 1B in a timely manner. For both cases, the licensee failed to initiate corrective action in a timely manner as required by procedure EN-LI-102, "Corrective Action Program." In response to the NRC's conclusions, the licensee updated circuit breaker procedures, replaced the Magne Blast circuit breaker for the Reactor Feed Water Pump Motor 1B, and initiated Condition Reports CR-RBS-2015-04259 and CR-RBS-2015-03437.

This performance deficiency is more than minor, and therefore a finding, because it is 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 untimely corrective action contributed to the unreliability of the Magne Blast circuit breaker for Reactor Feed Water Pump Motor 1B and increased the potential for spurious trips of other Magne Blast circuit breakers during design basis events due to improper racking. The team 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 Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was of very low safety significance (Green) because it: (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 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-significant in accordance with the licensee's maintenance rule program. This finding has an avoid complacency cross-cutting aspect within the human performance area because the licensee failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Specifically, the licensee tolerated the adverse trends, did not plan for further degradation, and the latent conditions ultimately resulted in several Magne Blast circuit breaker failures in December 2014 before the trend was recognized [H.12].

Inspection Report# : [2015010](#) (pdf)

Significance:  Oct 08, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Establish Adequate Procedures for Severe Weather Operations

The team identified a Green, non-cited violation of Technical Specification 5.4.1, which states in part, "procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, shall be established, implemented, and maintained for combating emergencies, including tornados." Specifically, prior to September 22, 2015, the licensee failed to establish adequate procedures to ensure loose debris (drift eliminators/grating that had come loose from the cooling towers) was secured. In response to this issue, the licensee inspected the area and prepared a work order to remove all loose drift eliminators. This finding was entered into the licensee's corrective action program as Condition Report CR-RBS-2015-06891.

The team determined that the failure to maintain adequate procedures to ensure compliance with technical specifications and Regulatory Guide 1.33 was a performance deficiency. This finding was more than minor because it was associated with the protection against external factors attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (severe weather). Specifically, the licensee failed to establish adequate procedures to ensure protection of the switchyard against external factors such as the loose drift

eliminators on the cooling tower as a potential missile hazard during high wind events. In accordance with Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, Exhibit 2, “Mitigating Systems Screening Questions,” the team determined that the finding was determined to have very low safety significance (Green) since the systems, structures, and components maintained their operability and functionality. The finding was determined to have a cross-cutting aspect in the area of problem identification and resolution, identification, because the licensee failed to implement a corrective action program with a low threshold for identifying issues. Individuals failed to identify issues completely, accurately, and in a timely manner in accordance with the program (P.1).

Inspection Report# : [2015007](#) (pdf)

Significance:  Oct 08, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

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

The team identified a Severity Level IV, Green, non-cited violation of 10 CFR 50.59, “Changes, Tests, and Experiments,” Section (c)(2) which states, in part, “A licensee shall obtain a license amendment pursuant to Section 50.90 prior to implementing a proposed change, test, or experiment if the change, test, or experiment would result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the final safety analysis report (as updated).” Specifically, prior to October 8, 2015, the licensee failed to correctly evaluate that a spurious reactor core isolation cooling actuation injecting into the feedwater line resulted in a more than minimal increase in the frequency of occurrence of the loss of feedwater heating accident previously evaluated in the updated final safety analysis report. In response to this issue, the licensee initiated a condition report to document completion of a new evaluation under current regulatory guidelines. This finding was entered into the licensee’s corrective action program as Condition Report CR-RBS-2015-7259.

The team determined that the failure to perform an adequate evaluation of a design change was a performance deficiency. This finding was also evaluated using traditional enforcement because it had the potential to impact the NRC’s ability to perform its regulatory function. This finding was more than minor because it was associated with the design control 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, and there was a reasonable likelihood that the change would have required NRC review and approval prior to implementation. Specifically, the licensee failed to correctly evaluate that a spurious reactor core isolation cooling actuation injecting into the feedwater line resulted in a more than minimal increase in the frequency of occurrence of the loss of feedwater heating accident previously evaluated in the updated final safety analysis report. In accordance with Inspection Manual Chapter 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, Exhibit 2, “Mitigating Systems Screening Questions,” the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency where the mitigating structure, system, or component maintained its operability or functionality. Since the violation is associated with a Green reactor oversight process violation, the traditional enforcement violation was determined to be a Severity Level IV violation, consistent with the example in paragraph 6.1.d(2) of the NRC Enforcement Policy. There is no cross-cutting aspect assigned to this performance deficiency because the performance deficiency is not indicative of current performance and also because cross-cutting aspects are not assigned to traditional enforcement violations.

Inspection Report# : [2015007](#) (pdf)

Significance:  Jul 02, 2015

Identified By: NRC

Item Type: FIN Finding

Failure to Promptly Document Adverse Conditions in the Corrective Action Program

The team identified a Green finding for multiple examples of failures to timely document adverse conditions, as

defined by corrective action program procedures, in condition reports. The team determined that these multiple failures, which were spread across multiple departments and programs, represented a programmatic deficiency in training of personnel and communication of expectations for compliance with corrective action program requirements.

The licensee's failure to promptly document multiple adverse conditions in condition reports as required by Procedure EN-LI-102 was a performance deficiency. This performance deficiency was more than minor because if left uncorrected in could lead to a more significant safety or security concern. Specifically, it could result in the licensee failing to promptly correct an adverse condition, which could lead to more significant consequences. This finding was associated with multiple cornerstones; the team determined that the mitigating systems cornerstone was the most appropriate for screening. Using Inspection Manual Chapter 0609 Appendix A, the team determined that this finding was of very low safety significance (Green) because it did not cause the loss of operability or function of any system or train and did not affect external event mitigation. This finding has a training crosscutting aspect in the human performance cross-cutting area (H.9) because the licensee failed to ensure that individuals were adequately trained to ensure an understanding of standards.

Inspection Report# : [2015008](#) (*pdf*)

Significance: **W** Jun 29, 2015

Identified By: NRC

Item Type: VIO Violation

Failure of the Plant-Referenced Simulator to Demonstrate Expected Plant Response

The team identified an apparent violation of 10 CFR 55.46(c)(1), "Plant-Referenced Simulators," for the licensee's failure to maintain the simulator so it would demonstrate expected plant response to operator input and to normal, transient, and accident conditions to which the simulator has been designed to respond. As of January 30, 2015, the licensee failed to maintain the simulator consistent with actual plant response for normal and transient conditions related to feedwater flows, alarm response, and behavior of the startup feedwater regulating valve controller. Specifically, the River Bend Station simulator failed to correctly model feedwater flows and resulting reactor vessel level response following a scram, failed to provide the correct alarm response for a loss of a reactor protection system motor generator set, and failed to correctly model the behavior of the startup feedwater regulating valve controller. As a result, operations personnel were challenged in their control of the plant during a reactor scram that occurred on December 25, 2014. This issue has been entered into the corrective action program as Condition Report RBS-CR-2015-01261, which includes actions to initiate simulator discrepancy reports, investigate and resolve the potential fidelity issues, and provide training to operations personnel on simulator differences.

This performance deficiency is more than minor, and therefore a finding, because it is associated with the human performance 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, the incorrect simulator response adversely affected the operations personnel's ability to assess plant conditions and take actions in accordance with approved procedures during the December 25, 2014, scram. The team performed an initial screening of the finding in accordance with inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Attachment 4, "Initial Characterization of Findings." Using Inspection Manual Chapter 0609, Attachment 4, Table 3, "SDP Appendix Router," the team answered 'yes' to the following question: "Does the finding involve the operator licensing requalification program or simulator fidelity?" As a result, the team used Inspection Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)," and preliminarily determined the finding was of low to moderate safety significance (White) because the deficient simulator performance negatively impacted operations personnel performance in the actual plant during a reportable event (reactor scram). This finding has an evaluation cross-cutting aspect within the problem identification and resolution cross-cutting area because the licensee failed to thoroughly evaluate this issue to ensure that the resolution addressed the extent of condition commensurate with its safety significance. Specifically, the licensee's evaluation of the fidelity

issue identified by the NRC in March 2014, focused on other training areas that used simulation, rather than evaluating the simulator modelling for additional fidelity discrepancies [P.2]. (Section 2.7.d)

Final significance determined to be White. Final significance determination and NOV issued September 10, 2015 (ADAMS ML15253A352):

This letter provides you the final significance determination of the preliminary White finding discussed in our letter dated July 7, 2015, which included the subject inspection report (Nuclear Regulatory Commission's (NRC) Agency wide Documents Access and Management System [ADAMS] Accession ML15188A532). The finding involved the failure to maintain the simulator so it would accurately reproduce the operating characteristics of the facility. Specifically, the River Bend Station's simulator failed to accurately model feedwater flow and reactor vessel level response following a scram, failed to provide the correct alarm response for loss of a reactor protection system motor generator set, and failed to correctly model the operation of the startup feedwater regulating valve.

In a letter dated July 30, 2015 (ML15216A612), you provided a response to the NRC staff's preliminary determination regarding this finding. Your response indicated that you agreed with the performance deficiency and the violation. After considering the information developed during the inspection and the additional information you provided in your letter, the NRC has concluded that the finding is appropriately characterized as White, a finding of low-to-moderate safety significance.

The NRC performed a supplemental inspection in accordance with IP 95001 to assess the adequacy of the licensee's corrective actions to address this performance issue. The results were documented in Inspection Report 05000458/2016010, dated May 25, 2016. The NRC determined that the licensee's extent-of-condition evaluation was not adequate to meet the inspection objective. Therefore, the White finding will remain open pending re-inspection.

Inspection Report# : [2015009](#) (pdf)

Inspection Report# : [2016010](#) (pdf)

Barrier Integrity

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Properly Implement Surveillance Testing of Penetration Valve Leakage Control System Leads to Inoperability in Excess of Technical Specification Allowed Outage Time

The inspectors identified a non-cited violation of Technical Specification 3.6.1.9, "Main Steam-Positive Leakage Control System," for the licensee's failure to take required actions for an inoperable subsystem of the main steam positive leakage control system. Specifically, after rendering Division II of the main steam positive leakage control system inoperable for a period of time in excess of the 30-day allowed outage time, the licensee failed to place the unit in Mode 3 within 12 hours. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2015-03622. The licensee restored compliance by restoring Division II of main steam positive leakage control system to operable status. Corrective actions included modifying surveillance procedures for main steam positive leakage control system to ensure that they are carried out correctly.

The performance deficiency was more than minor, and therefore a finding, because it was associated with the barrier performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide

reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the plant was operated at power for an extended period of time with one subsystem of a system designed to prevent radioactive leakage across the main steam isolation valves inoperable. The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 3, "Barrier Integrity Screening Questions." The inspectors determined that the finding was of very low safety significance (Green) because (1) the finding did not represent an actual open pathway in the physical integrity of reactor containment (valves, airlocks, etc.), containment isolation systems (logic and instrumentation), or heat removal components and (2) the finding did not involve an actual reduction in function of hydrogen igniters in the reactor containment. This finding had a cross-cutting aspect in the area of human performance associated with change management because leaders failed to use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority [H.3].

Inspection Report# : [2015004](#) (*pdf*)

Significance: G Dec 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Restore Main Steam Positive Leakage Control System to Operable Prior to Changing Modes

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 3.0.4, "Limiting Condition for Operation Applicability," for the licensee's failure to restore safety-related equipment to operable status prior to changing modes. Specifically, the licensee failed to restore Division II of the main steam positive leakage control system to operable status prior to entering a mode of applicability for Technical Specification 3.6.1.9. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2015-03581. The licensee restored compliance by restoring Division II of main steam positive leakage control system to an operable status by restoring service water to the Division II penetration valve leakage control system (LSV) compressor. Corrective actions included training for operations personnel on plant status control and implementation of a physical method of identifying equipment that has been administratively repositioned.

The performance deficiency was more than minor, and therefore a finding, because it was associated with the barrier performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the reactor was taken to Mode 2 with Division II of the main steam positive leakage control system inoperable. The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 3, "Barrier Integrity Screening Questions." The inspectors determined that the finding was of very low safety significance (Green) because (1) the finding did not represent an actual open pathway in the physical integrity of reactor containment (valves, airlocks, etc.), containment isolation systems (logic and instrumentation), or heat removal components and (2) the finding did not involve an actual reduction in function of hydrogen igniters in the reactor containment. This finding had a cross-cutting aspect in the area of human performance associated with procedure adherence because the licensee failed to ensure that individuals follow processes, procedures, and work instructions [H.8].

Inspection Report# : [2015004](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Jul 02, 2015

Identified By: NRC

Item Type: FIN Finding

Failure to Recognize Violations of Contamination Control Requirements as Adverse Conditions

The team identified a Green finding for a failure to document adverse conditions associated with radiological housekeeping or contamination controls in the corrective action program as required by procedure. The licensee's procedures did not adequately provide examples of deficient radiological practices as adverse conditions.

The licensee's failure to document adverse conditions in the corrective actions program as required by procedure was a performance deficiency. This constituted a programmatic weakness in the licensee's corrective action program to document adverse conditions associated with inadequate radiological practices. This performance deficiency is more than minor because it is associated with the program and process attribute (contamination control) of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Using IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined the finding to be of very low safety significance because it was not an as low as reasonably achievable (ALARA) issue, there was no overexposure or substantial potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding has a cross-cutting aspect in resources component of the human performance area because the licensee's corrective action procedures were not adequate to include deficient radiological practices as an adverse condition (H.1).

Inspection Report# : [2015008](#) (*pdf*)

Public Radiation Safety

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Conduct Operations and Control Work Practices to Minimize Residual Radioactivity into the Site, including the Subsurface

The inspectors identified a non-cited violation of 10 CFR 20.1406(c) because the licensee failed to conduct operations to minimize the introduction of residual radioactivity into the site. Specifically, the licensee failed to implement procedural requirements to identify and evaluate the environmental risk and control work practices to prevent spills and leaks with a credible mechanism to reach groundwater between the annual periods of 2013 through 2015. This resulted in several spill/leak events which resulted in contaminated areas and radioactivity reaching the environment and groundwater. The licensee documented this finding in their corrective action program as CR-RBS-2015-08831.

The failure to conduct operations and control work practices to prevent spills and leaks with a credible mechanism to reach groundwater and minimize residual radioactivity into the site was a performance deficiency. The performance deficiency was more than minor, and thus a finding, because it is associated with the program and process attribute of the Public Radiation Safety Cornerstone, and adversely affected the cornerstone objective to ensure the licensee's ability to prevent inadvertent release and/or loss of control of licenses material to an unrestricted area. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance (Green) because the issue involved radioactive material control, but did not involve: (1) transportation or (2) public exposure in excess of 0.005 rem. The finding had a Work Management cross-cutting aspect in the area of Human Performance because the licensee failed to implement a process of planning, controlling, and executing work activities such that nuclear or environmental safety was the overriding priority in which the work process includes the identification and management of risk

commensurate to the work and the need for coordination with different groups or job activities [H.5].
Inspection Report# : [2015004](#) (*pdf*)

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.

Miscellaneous

Last modified : August 29, 2016