

River Bend 1 2Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Jun 29, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

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

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

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

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

Significance: G Oct 11, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Establish an Adequate Controlling Procedure for Stroking Safety Relief Valves at Low Power

The inspectors identified a Green non-cited violation of Technical Specification 5.4.1.a for the failure to develop adequate controls for low-power stroking of safety relief valves. In response to this finding, the licensee trained senior reactor operators on the lessons learned from the finding. The licensee entered the finding into the corrective action program as Condition Report CR-RBS-2012-03816.

The performance deficiency was more than minor because it was associated with the procedure quality attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 1, Section B, this finding screened to very low safety significance because it was a transient initiator that did not result in a reactor

trip and loss of mitigation equipment. Because the most significant causal factor of the performance deficiency was that the licensee had made an inappropriate assumption that the abnormal operating procedure was a satisfactory controlling document, this finding has a human performance cross cutting aspect associated with the decision making component, in that the licensee failed to use conservative assumptions in decision-making [H.1(b)] (Section 4OA5.3).
Inspection Report# : [2012010](#) (*pdf*)

Significance:  Oct 11, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Effective Corrective Actions for Lockout Relay Failures

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the licensee's failure to identify and correct a condition adverse to quality. Specifically, after a lockout relay mechanically bound in 2011, causing a fire, the licensee failed to identify and correct other susceptible relays. In response, the licensee tested other susceptible relays and replaced those that failed the test. The licensee entered the finding into the corrective action program as Condition Report CR-RBS-2012-05894.

This performance deficiency was more than minor because it was associated with the equipment performance attribute of the initiating events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 1, Section B, this finding screened to a detailed risk evaluation because it had caused a reactor trip and the loss of mitigation equipment such as loss of main feedwater and normal service water. The detailed risk evaluation included a quantitative bounding analysis and a qualitative evaluation in accordance with NRC Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," to determine that this finding was of very low safety significance (Green). Because the most significant causal factor of the performance deficiency was that the licensee had failed to recognize the potential risk to the plant when performing the evaluations for the failed lockout relays, this finding has a human performance cross-cutting aspect associated with the work control component in that licensee did not plan and coordinate work activities by incorporating risk insights, consistent with nuclear safety [H.3(a)] (Section 4OA5.4).

Inspection Report# : [2012010](#) (*pdf*)

Significance:  Oct 11, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Test Lockout Relays in Accordance with Vendor Testing Practices

The inspectors reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, for the licensee's failure to establish adequate preventative maintenance instructions for lockout relays in accordance with vendor recommendations for electrical testing. In response, the licensee incorporated vendor recommendations into the instructions for testing lockout relays. The licensee entered the finding into the corrective action program as Condition Report CR RBS-2011-02209.

The performance deficiency was more than minor because it was associated with the equipment performance attribute of the initiating events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, in that it resulted in a fire. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 1, Section B, this finding screened to very low safety significance (Green) because it was a transient initiator that did not result in a reactor trip or loss of mitigation

equipment. The finding did not have a cross-cutting aspect because the performance deficiency was not representative of current plant performance (Section 40A5.5).

Inspection Report# : [2012010](#) (*pdf*)

Significance:  Oct 11, 2012

Identified By: NRC

Item Type: FIN Finding

Failure to Establish An Adequate Cable Reliability Program

The inspectors reviewed a self-revealing finding for the licensee's failure to establish an effective cable reliability program, in that the licensee failed to distinguish between wetted and dry splices. In response, the licensee tested the high-risk-ranked cables, and replaced those that failed the test. The licensee entered the finding into the corrective action program as Condition Report CR-RBS-2012-03440.

The performance deficiency was more than minor because it was associated with the equipment performance attribute of the initiating events cornerstone, and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, in that it resulted in a reactor scram. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 1, Section B, this finding screened to very low safety significance (Green) because it was a transient initiator that did not result in both a reactor trip and loss of mitigation equipment. Because the most significant causal factor of the performance deficiency was that the licensee failed to implement and institutionalize operating experience related to wetted splices, this finding has a problem identification and resolution cross cutting aspect associated with operating experience in that the licensee did not implement and institutionalize operating experience through changes to station processes and procedures to support plant safety [P.2 (b)] (Section 40A5.6).

Inspection Report# : [2012010](#) (*pdf*)

Significance:  Sep 28, 2012

Identified By: NRC

Item Type: FIN Finding

Inadequate Verification of Leading Edge Flow Meter Functionality

The inspectors identified a finding for the licensee's failure to calibrate the feed water Leading Edge Flow Meter (LEFM) CheckPlus System following maintenance activities. This resulted in an error in reactor feed water flow rate data used to calculate reactor core thermal power. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-06274.

This performance deficiency is more-than-minor and is therefore a finding because it was associated with the procedure quality attribute of the initiating events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The performance deficiency challenged the initiating events cornerstone objective by allowing the licensee to operate the plant outside of the prescribed analyzed uncertainty value, used in determining maximum core thermal power. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," the inspectors determined that this finding has 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 inspectors determined that the apparent cause of this finding was that when the licensee had changed the flow meter maintenance work scope that required transducer replacement, they had not included the vendor verification requirement in the revised work order. Therefore, this finding has a cross-cutting aspect in the Human Performance area of Work Control because the licensee had failed to appropriately coordinate the impact of changes to the work scope or activity on the plant. [H.3(b)].

Inspection Report# : [2012004](#) (pdf)

Mitigating Systems

Significance: G Jun 29, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

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

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

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

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

Significance: G Mar 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

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

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

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

Significance:  Dec 31, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Identify and Correct a Condition Adverse to Quality

The inspector documented a self-revealing finding associated with the licensee's failure to follow the requirements of Station Procedure EN-LI-102, "Corrective Action Process," and promptly identify and correct a condition adverse to quality. Specifically, on August 4, 2010, and again on February 14, 2011, station personnel found where the B reactor feedwater pumps auxiliary oil system pressure regulator set point had drifted high out of tolerance, but did not initiate condition reports for this condition adverse to quality. The licensee entered this issue into their corrective action program as Condition Reports CR-RBS-2011-09141 and CR-RBS-2012-07249.

The failure to follow the requirements of Station Procedure EN-LI-102 and identify and correct a condition adverse to quality was a performance deficiency. The performance deficiency was more than minor, and is therefore a finding because it affected the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the inspector determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component, in that, the licensee failed to define and effectively communicates expectations regarding procedural compliance and personnel follow procedures. Specifically, station personnel failed to follow procedure.

Inspection Report# : [2012012](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Promptly Identify and Correct a Condition Adverse to Quality

The inspector identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," associated with the licensee's failure to promptly identify and correct a condition adverse to quality. Specifically, following a turbine trip/load reject and subsequent reactor scram, reactor vessel level rose to the point of receiving a

high level isolation signal (Level 8), and the licensee failed to identify this as an unexpected condition. The licensee entered this issue into the corrective action program as Condition Report CR-RBS-2012-07250.

The failure to promptly identify and correct a condition adverse to quality was a performance deficiency. The performance deficiency is more than minor, and is therefore a finding because it affected the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) For Findings At-Power," the inspector determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action component, because the licensee failed to periodically trend and assess information from the corrective action program and other assessments in the aggregate to identify programmatic and common cause problems.

Inspection Report# : [2012012](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Design Control of the Feedwater Control System

The inspector identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to ensure that design requirements were correctly translated into installed plant equipment. Specifically, the licensee failed to appropriately translate the feedwater control systems design of maintaining full feedwater capacity following a turbine trip with load rejection by avoiding loss of feedwater due to a high level isolation (Level 8) using the level set point modification module. The licensee entered this issue into the corrective action program as Condition Report CR-RBS-2012-02249 and CR-RBS-2012-07254.

The failure to ensure that design requirements were correctly translated into installed plant equipment was a performance deficiency. This performance deficiency is more than minor, and is therefore a finding, because it affected the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the inspector determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. This finding did not have a cross cutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : [2012012](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: FIN Finding

Failure to Correct an Identified Condition Adverse to Quality

The inspector identified a finding associated with the licensee's failure to follow the requirements of Station Procedure EN-LI-102, "Corrective Action Process," and correct a condition adverse to quality. Specifically, the licensee identified that both inadequate guidance and oversight of a supplemental worker as a cause for the inadequate crimp on the B reactor feedwater pump, however the corrective actions taken only addressed the oversight of supplemental workers, and no actions were taken to address the insufficient guidance provided by the station work order. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2012-07253.

The failure to follow the requirements of Station Procedure EN-LI-102 and correct a condition adverse to quality was a performance deficiency. The performance deficiency is more than minor, and is therefore a finding, because it affected the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the inspector determined that the finding is of very low safety significance (Green). because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action component, because the licensee failed to thoroughly evaluate problems such that the resolutions address causes.

Inspection Report# : [2012012](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Correct the Maintenance Organizations Inadequate Procedure Use and Adherence

The inspector identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," associated with the licensee's failure to promptly identify and correct a condition adverse to quality. Specifically, during a root cause evaluation associated with a lockout relay failure, the licensee identified that the maintenance organizations improper procedure use and adherence was an extent of cause (condition adverse to quality). The licensee credited actions in another root cause evaluation to correct the identified extent of cause, however the actions taken did not address the maintenance organizations procedure use and adherence issue. The licensee entered this issue into the corrective action program as Condition Report CR-RBS-2012-07250.

The failure to promptly identify and correct the maintenance organizations improper procedure use and adherence issue was a performance deficiency. The performance deficiency is more than minor, and is therefore a finding, because it affected the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) For Findings At-Power," the inspector determined that the finding is of very low safety significance (Green). because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The finding has a

cross-cutting aspect in the area of problem identification and resolution associated with the corrective action component, because the licensee failed to thoroughly evaluate problems such that the resolutions addressed causes.

Inspection Report# : [2012012](#) (*pdf*)

Significance: G Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Design Control of the Control Building Chilled Water System

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” associated with the failure to maintain temperature control of the safety-related battery rooms. An engineering evaluation to change a procedure to allow gagging open of the control building heating and ventilation system control temperature valves failed to consider the appropriate environmental temperature limits for the rooms. This issue was entered into the licensee’s corrective action program as Condition Report CR-RBS-2012-07353.

The failure to maintain temperature control of the safety-related battery rooms was a performance deficiency. This performance deficiency is more-than-minor and is therefore a finding because it is associated with the design control attribute of the mitigating systems cornerstone and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

Specifically, during a loss of offsite power with low seasonal temperatures, the gagged-open temperature control valve would reduce the battery rooms’ temperatures below their environmental design temperature and adversely affect the capacity of the safety-related batteries. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, “Initial Characterization of Findings,” and NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At Power,” Exhibit 2, Section A.1, this finding screened as very low safety significance (Green) because the finding was 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. The engineering evaluation that changed the proper battery room controls was performed in 1997. Therefore, the finding did not have a cross-cutting aspect because the failed review is not indicative of current licensee performance.

Inspection Report# : [2012005](#) (*pdf*)

Significance: G Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedures for Lubrication of the Standby Liquid Control Pump Motor Bearings

The inspectors identified a non-cited violation of Technical Specification 5.4.1.a for not establishing appropriate lubrication procedures for the standby liquid control pump motor bearings. Specifically, the station incorrectly used the Electrical Power Research Institute (EPRI) guidance for maintenance procedure by adding twice the amount of grease required. This issue was entered into the licensee’s corrective action program as Condition Report CR-RBS-2012-05573.

The failure to establish appropriate lubrication procedures is a performance deficiency. This performance deficiency is more-than-minor and is therefore a finding because if left uncorrected, it has the potential to lead to a more significant safety concern. Specifically, if the work instructions were not corrected, future work activities that grease the motor bearings in accordance with those work orders would over-grease the bearings, which may result in common-cause failures of standby motors. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, “Initial Characterization of Findings,” and NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At Power,” Exhibit 2, Section A.1, this finding screened as very low safety significance (Green). Specifically, the finding is a deficiency that affected the qualification of the standby liquid control pump motors; however, the systems maintained their operability. Because the most significant causal factor of

the performance deficiency was station personnel and management failing to fully evaluate the previously identified inadequate lubrication of motors, this finding has a problem identification and resolution cross-cutting aspect associated with the corrective action program component [P.1(c)].

Inspection Report# : [2012005](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow Procedure for Lifting Leads Results in Inoperability of Standby Service Water Fan

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a due to a failure to follow work order instructions. Specifically, station personnel failed to follow the requirements of Procedure GMP-0042, "Lifted Leads and Jumpers," Revision 13 when removing and reinstalling a time-delay relay for a standby service water cooling fan. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-06325.

The failure to follow work order instructions is a performance deficiency. This performance deficiency is more-than-minor because it is associated with the equipment reliability attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to ensure the correct wiring to the standby service water fan time-delay relay resulted in the inability of the fan to be started locally, which is required for remote shutdown of the plant. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, Section A, question 3, this finding required a detailed risk evaluation because the finding represented an actual loss of function of at least a single train for greater than the technical specification allowed outage time. The risk of the condition was evaluated by a senior reactor analyst. The sequence that would result in a risk increase is control room abandonment with concurrent maintenance being performed on the alternate bank of 5 fans. This would leave only 4 functional fans in one division of standby service water, whereas 5 fans are needed per design to meet the safety function.

The frequency of control room abandonment is approximately $5E-5$ /yr and the frequency of maintenance performed on one bank of standby service water fans is approximately $1E-2$. Therefore, the frequency of a scenario where the failure of one fan to operate from the alternate shutdown panel would cause a measurable effect on risk is approximately $5E-7$ /yr. The other division of standby service water fans was unaffected by this condition. Accordingly, the significance of the performance deficiency was determined to be very low (Green). This finding has a human performance cross-cutting aspect associated with the work practices component in that the electricians failed to use adequate human error prevention techniques [H.4(a)].

Inspection Report# : [2012005](#) (*pdf*)

Significance:  Oct 11, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Correct Spurious Isolations of Reactor Core Isolation Cooling System

The inspectors 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. Specifically, the licensee failed to identify and correct an inadequate design of the reactor core isolation cooling (RCIC) system that resulted in spurious system isolations during main turbine trips. In response, the licensee installed a time delay into the circuit that had tripped the RCIC steam supply before the RCIC received a start signal. The licensee entered the finding into the corrective action program as Condition Report CR-RBS-2012-03439.

The performance deficiency 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, in that the repeated spurious isolations adversely affected the RCIC system reliability. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, this finding screened to a detailed risk evaluation which determined that the finding was of very low safety significance (Green). This finding does not have a cross-cutting aspect because the apparent cause of this finding was the licensee's decision in 2008 to not add a time delay to the high differential pressure trip, and the NRC does not consider that cause to be representative of current licensee performance (Section 40A5.2.a).

Inspection Report# : [2012010](#) (*pdf*)

Significance: G Oct 11, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Declare Reactor Core Isolation Cooling System Inoperable

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to declare the RCIC system inoperable when the system was unreliable for an automatic start following a main turbine trip. The licensee addressed the underlying safety concern by installing a time delay into the circuit that had tripped the RCIC steam supply before RCIC received a start signal. The licensee entered the finding into the corrective action program as Condition Report CR-RBS-2012-06015.

The performance deficiency was more than minor because it affected 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. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, this finding screened to a detailed risk evaluation which determined that the finding was of very low safety significance (Green). Because the most significant causal factor of the performance deficiency was that the organization had used the absence of information to determine RCIC operability, this finding has a cross-cutting aspect in the human performance area associated with the decision-making component, because the licensee had failed to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it was unsafe in order to disapprove the action [H.1(b)] (Section 40A5.2.b).

Inspection Report# : [2012010](#) (*pdf*)

Significance: G Oct 11, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Prevent Conflicts of Duty for Fire Brigade Members

The inspectors reviewed a self-revealing, non-cited violation of License Condition 2.C.(10) because the licensee failed to prevent conflict of duties for fire brigade members, which affected the timely response to fires. In response, the control room initiated a night order to ensure that when a fire brigade member is called for fitness-for-duty testing, the staff will either designate a relief fire brigade member or arrange a deferral of the fitness-for-duty testing. The licensee plans to address long-term corrective actions through appropriate procedure changes at the fleet level. The licensee entered the finding into the corrective action program as Condition Report CR RBS-2012-03817.

The performance deficiency was more than minor because it was associated with the protection against external events 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. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, “Initial Characterization of Findings,” and NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” Exhibit 2, this finding screened to very low safety significance (Green) because the affected fire brigade member was unavailable for less than two hours. Because the most significant causal factor of the performance deficiency was that the licensee failed to ensure that conflicts between the fitness-for-duty and fire brigade procedures had been properly resolved prior to implementation, this finding has a human performance cross cutting aspect associated with resources because the licensee did not ensure that procedures were complete and accurate to assure nuclear safety [H.2(c)] (Section 40A5.8).

Inspection Report# : [2012010](#) (*pdf*)

Significance:  Sep 28, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Untimely Corrective Actions to Ensure Reliability of the 480 VAC Molded Case Circuit Breakers and Unitized Motor Starters

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the failure to correct within a reasonable period conditions adverse to quality associated with testing safety-related molded-case circuit breaker and unitized motor starter circuit breakers. The licensee’s immediate corrective actions included increasing the rate of breaker preventive maintenance and testing to reduce the long-standing risk-significant breaker backlog. The station documented the finding in Condition Report CR-RBS-2012-06364.

The performance deficiency was more-than-minor and is therefore a finding because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of the safety-related molded-cased circuit breakers to respond to initiating events to prevent undesirable consequences. Specifically, failures of the affected breakers represent an increase in risk to safe plant operations, because to isolate a fault caused by a defective 480VAC breaker, the upstream feeder breaker would trip, thus causing a loss of power to additional safety-related components. Using Inspection Manual Chapter 0609, Appendix A, the finding is associated with the loss of mitigation equipment (Service Water pumps A and C), and so screened to a detailed risk evaluation. That evaluation determined that the incremental conditional core damage probability (ICCDP) was 2.1E-8 for a fire in one of the standby cooling tower electrical rooms, resulting in a loss of one train of service water pumps (A and C, or B and D), as a consequence of the failure of the proximate 480 VAC breaker to open. The risk was low because normal service water would be unaffected by the fire, and it would be unlikely that offsite power would be lost concurrently. The fire could also affect control room ventilation, but the analyst qualitatively concluded that this would not add more than negligibly to the overall risk. Consequently, the finding has very low safety significance (Green). The inspectors determined that the apparent cause of the finding was a combination of two factors related to resources: station management did not ensure that each work group completed its actions to support timely resolution, and personnel vacancies from key positions hampered completion of the breaker testing program. The inspectors therefore determined the finding had a cross-cutting aspect in the human performance area associated with the resources component because station management did not ensure personnel resources were available to minimize long-standing equipment issues. [H.2(a)].

Inspection Report# : [2012004](#) (*pdf*)

Significance:  Sep 28, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Appropriately Tune the Reactor Core Isolation Cooling Turbine Speed Controller

The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” associated with inadequate instructions for tuning the reactor core isolation cooling (RCIC) turbine speed governor. The licensee’s immediate corrective actions included revising the maintenance procedure and

recalibrating the RCIC turbine speed controller. The station documented the finding in Condition Reports CR-RBS-2012-01750 and CR-RBS-2012-01904.

This performance deficiency is more-than-minor and is therefore finding because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, during operation, this performance deficiency resulted in improper tuning of the turbine speed control system, which caused the turbine exhaust check valve to repeatedly slam against its open and shut valve stops and abnormally large turbine governor valve oscillations. Because the licensee had not tuned the turbine speed control system to run at a steady speed, the licensee removed RCIC from service to properly calibrate the control system, thereby adversely affecting RCIC availability. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the issue affected the Mitigating Systems Cornerstone. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," the inspectors determined that the issue had very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification; did not represent a loss of system and/or function, did not represent either an actual loss of function of at least a single train for greater than its Technical Specification Allowed Outage Time, or two separate safety systems out-of-service for greater than its Technical Specification Allowed Outage Time; and did not represent an actual loss of function of one or more non-Technical Specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. The inspectors determined the apparent cause of this finding was the licensee's failure to incorporate industry and vendor operating experience into the work instructions on February 12, 2011, to correct RCIC governor valve oscillations. Therefore, this finding has a cross-cutting aspect in the area of problem identification and resolution associated with the operating experience component because the licensee did not implement and institutionalize industry knowledge, including vendor recommendations, to support plant safety [P.2 (b)].

Inspection Report# : [2012004](#) (*pdf*)

Barrier Integrity

Significance: G Dec 31, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Implement Effective Corrective Actions for Defects in MasterPact Breakers

The inspectors reviewed a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to promptly correct a condition adverse to quality. Specifically, station personnel failed to implement repairs to the mechanism-operated contact linkages for safety-related breakers, ultimately resulting in the failure of standby gas treatment filtration train 1B to start on demand. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2012-005894.

The failure to correct a condition adverse to quality is a performance deficiency. This performance deficiency is more-than-minor because it is associated with the systems, structures, and components and barrier performance attributes of the barrier integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the standby gas treatment exhaust filter train failed to start during a surveillance test because of a nonconforming mechanical linkage in the feeder breaker resulting in unavailability for standby gas train 1B. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance

Determination Process for Findings At Power,” Exhibit 3, Section C, question 1, the finding screened as very low safety significance (Green), because the finding represented only a degradation of the radiological barrier function provided by the standby gas treatment system. No cross-cutting aspect was assigned to this finding because the NRC concluded the finding did not reflect current licensee performance.

Inspection Report# : [2012005](#) (*pdf*)

Significance:  Sep 28, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Improper Hydrogen Igniter Breaker Trip Coil Setting

The inspectors reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the failure to correctly translate the design bases for the power supply for the hydrogen igniter system into procedures used to set the associated power system supply breaker trip coil. The licensee’s immediate corrective actions included evaluating the proper trip coil setting and adjusting the trip coil accordingly. The station documented the finding in Condition Report CR-RBS-2012-02623.

This performance deficiency is more-than-minor and is therefore a finding because it is associated with the design control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone’s objective to ensure that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, this performance deficiency resulted in an incorrect trip coil setting, which decreased the reliability of the hydrogen igniters, which burn hydrogen in a controlled manner to prevent containment damage. Using Inspection Manual Chapter 0609.04, “Initial Characterization of Findings,” the finding required a significance evaluation per Inspection Manual Chapter 0609, Appendix H, “Containment Integrity Significance Determination Process,” because the unavailable Division 1 hydrogen igniters represented a degraded condition affecting containment barrier integrity that can potentially increase large early release frequency (LERF) without affecting the core damage frequency (CDF). Inspectors determined that this was a type B finding. Using section 6.0, the inspectors determined that the finding was of very low safety significance (Green) because the hydrogen igniters are arranged in two independent divisions such that each containment region has two igniters, one from each division, controlled and powered redundantly so that ignition would occur in each region even if one division failed to energize. The inspectors determined that the apparent cause of this finding was that in response to earlier failures of the trip coil, the licensee had not investigated the problem thoroughly enough to identify and correct this performance deficiency. However, because the earlier failures had all occurred more than seven years ago, the inspectors determined that this cause did not reflect present licensee performance, so the inspectors did not assign a cross-cutting aspect to it.

Inspection Report# : [2012004](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Mar 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

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

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

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

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

Significance:  Mar 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure of a Radiation Protection Technician to Provide Adequate Job Coverage

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

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

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

Significance:  Mar 30, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

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

The inspectors reviewed a self-revealing finding associated with the licensee's failure to provide adequate instructions

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

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

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

Public Radiation Safety

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

Significance:  Oct 11, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Loss of Onsite Safety Review Committee Independence

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, for several examples of failures to follow Procedure EN OM 119, "Onsite Safety Review Committee," Revision 8, which indicated that the onsite safety review committee failed to accomplish an independent review of station activities in accordance with the procedure. In response to this finding, the licensee developed a process to document the committee findings and reinforced roles and responsibilities for committee conduct, and committee members reviewed the implementing procedure. The licensee entered this finding into the corrective action program as Condition Report CR-RBS-2012-

03739.

The multiple failures to follow the onsite safety review committee implementing procedure were performance deficiencies that were more-than-minor because failure to correct these performance deficiencies could compromise the nuclear safety oversight function of the committee, which could result in inappropriate decision-making on activities important to nuclear safety. In accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," the finding was of very low safety significance because the performance deficiency did not result in any risk-significant issues. Because the most significant causal factor of the performance deficiency was the licensee's failure to properly define, communicate and implement the roles for decision-making that affected nuclear safety, this finding has a human performance cross-cutting aspect associated with decision-making because the licensee failed to adequately communicate the authority and roles of the onsite safety review committee to the members [H.1(a)] (Section 4OA5.7).

Inspection Report# : [2012010](#) (*pdf*)

Last modified : September 03, 2013