

River Bend 1

1Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2015

Identified By: Self-Revealing

Item Type: FIN Finding

Inadequate Engineering Change and Work Instruction Review Results in Reactor Recirculation Pump Trip

The inspectors reviewed a self-revealing finding for the licensee's failure to properly implement Procedure EN-DC-115, "Engineering Change Process," when developing engineering change notice ECN 39186, to ensure that no adverse impacts on the plant would be encountered. Specifically, when installing new Emergency Response and Information System equipment in the main control room, using ECN 39186, the reactor recirculation pump A unexpectedly tripped, resulting in a reduction in power from 85 percent to 67 percent power. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-06685.

The failure to follow Procedure EN-DC-115, to ensure that no adverse impacts were encountered during the implementation of ECN 39186, is a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is associated with the Initiating Events Cornerstone attribute of design 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, implementation of a plant modification resulted in an unexpected trip of the running recirculation pump which led to an unplanned downpower from 85 percent to 67 percent power. The inspectors initially screened the finding in accordance with 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," the inspectors determined this finding is of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown. This finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, individuals and work groups did not communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety was maintained [H.4].

Inspection Report# : [2015001](#) (*pdf*)

Significance: G Mar 31, 2015

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Operate Condensate Demineralizer System Following Reactor Scram Results in Loss of All Feedwater

Green. The inspectors reviewed a self-revealing finding for the licensee's failure to follow Procedure SOP-0093, "Condensate Demineralizer System," Revision 033, following a reactor scram on October 17, 2014. Specifically, station operators inappropriately removed all 10 condensate demineralizers from service. This resulted in a trip of feedwater pump 1C and a loss of feedwater to the reactor, complicating the scram. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-05209.

On October 17, 2014, the failure of licensee personnel to operate the condensate demineralizer system in accordance

with SOP-0093, following a reactor scram, is a performance deficiency. This performance deficiency is more than minor because it affected the configuration control attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, in that this finding resulted in complications to the scram recovery. This finding is of very low safety significance (Green) because it did not cause both 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. This finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, operations department did not clearly communicate performance standards and expectations regarding equipment operator actions during abnormal and emergency situations within their own organization, such that nuclear safety was maintained [H.4].

Inspection Report# : [2015001](#) (*pdf*)

Mitigating Systems

Significance:  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform Adequate Operability Evaluations on Degraded High Pressure Core Spray System

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 perform an adequate operability evaluation in accordance with Entergy Procedure EN-OP-104, “Operability Determination and Functionality Assessment.” Specifically, operations staff failed to properly evaluate leakage from the suppression pool through the high pressure core spray system. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-04004.

The failure to perform an adequate operability determination for leakage from the safety-related suppression pool was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it adversely affected the configuration control attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a subsequent operability determination classified the suppression pool as inoperable. The inspectors used NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, to evaluate the issue. The finding required a detailed risk evaluation because it involved the potential loss of system and/or function. A Region IV senior reactor analyst performed a detailed risk evaluation for the issue. In the detailed risk evaluation, the senior reactor analyst concluded that the finding was determined to have very low safety significance (Green) because the high pressure core spray system would have remained functional for 21 days which is in excess of the probabilistic risk assessment mission time of 24 hours. The finding also did not screen as risk significant for large early release frequency. The finding has a cross-cutting aspect in the area of human performance associated with Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. Specifically, station operators, and the condition review group, failed to evaluate the condition of the suppression pool when the source of the leakage was uncertain [H.11].

Inspection Report# : [2015001](#) (*pdf*)

Significance:  Jan 08, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate System Operating Procedures with Two Examples

Title 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” states, in part, “Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.” Contrary to this,

- System Operating Procedure SOP-0049, “125 VDC SYSTEM (SYS # 305),” Revision 29, did not have the necessary qualitative acceptance criteria (procedure steps) to accomplish the required activity of transferring the 125 VDC standby switchgear ENB-SWG01A to the backup charger using Section 5.7 of this procedure. During in-plant job performance measure validation for the initial exam, licensed operators were unable to simulate the transfer using System Operating Procedure SOP-0049. This procedure directed the operators to use an operator aid that, according to the procedure, was located inside panel BY5-TRS4. The operator aid was not inside the panel and was never found. Because of this, the job performance measure had to be rejected and another developed. To correct this issue, the licensee added the appropriate steps to System Operating Procedure SOP-0049 that were originally located in the missing operator aid and released it for use as Revision 30 on December 11, 2014. This procedure deficiency was entered into the licensee’s corrective action program as Condition Report CR-RBS-2014-05684.
- System Operating Procedure SOP-0071, “ROD CONTROL AND INFORMATION SYSTEM (SYS # 500),” Revision 29, did not have the necessary qualitative acceptance criteria (procedure steps) to accomplish the required activity of clearing a rod-block after pulling a control rod to raise reactor power during a start-up. During exam administration, an applicant for a senior reactor license could not get the rod block and associated alarm reset during a scenario using "Method 1" as described in System Operating Procedure SOP-0071. This procedure had incorrect guidance in Section 5.13 using "Method 1" in that the “ROD SELECT CLEAR” push button must be pressed several times to clear the rod block and this method only directed a single push of this button to reset the rod block and its associated alarm. Because of this, the applicant struggled to get through the reactivity change for the reactor during the scenario. To correct this issue, the licensee is working through the procedure change process for this procedure and has informed the licensed operator crews of the issue with "Method 1" until the appropriate steps are corrected within the procedure and it is released as Revision 30. This procedure deficiency was entered into the licensee’s corrective action program as Condition Report CR-RBS-2014-06331.

The failure of these two procedures to have the appropriate qualitative criteria to complete these two activities was a performance deficiency. The finding was more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring availability, reliability, and capability of systems needed to respond to initiating events to prevent undesired consequences. Specifically, inadequate procedures could adversely affect the operating crew’s ability to take appropriate actions to ensure reactor safety is being maintained. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, the team determined that the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee’s maintenance rule program for greater than 24 hours. The finding has a cross-cutting aspect in the area of human performance associated with documentation because the organization did not ensure that the procedures were accurate and up to date for these activities [H.7].

Inspection Report# : [2014302](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Retain Scenario-Based Testing Documentation

The inspectors identified a non-cited violation of 10 CFR 55.46, "Simulation Facilities," for the failure of the licensee to retain the results of required performance tests for four years after completion, or until superseded by updated test results. The licensee could not locate scenario-based testing documentation conducted for the March 2014 initial license exam. The licensee asserted in writing that the testing was performed, but that the electronic test packages had been lost. This issue was entered into the licensee's corrective action program as CR-RBS-2014-04595.

The failure of the licensee's training staff to retain the results of scenario-based testing for four years or until superseded was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it meets the more-than-minor example of Inspection Manual Chapter 0612, Appendix E, Example 1.b, which states that a record keeping issue is "Not minor if: Required records were irretrievably lost." This is associated with the human performance attribute of the mitigating systems cornerstone and it adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, because of the lack of documentation the licensee was unable to demonstrate that its scenario-based testing would ensure the simulator is capable of producing the expected reference unit response without significant performance discrepancies, or deviation from an approved scenario sequence, for scenarios used to evaluate licensed operators and applicants. Using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheets, and the corresponding Appendix I, "Licensed Operator Requalification Significance Determination Process" (block 14), the finding was determined to have very low safety significance (Green) because it is a "Simulator Testing, Maintenance, or Modification Deficiency." This finding has a cross-cutting aspect in the procedure adherence component of the human performance cross-cutting area because the licensee failed to ensure that individuals follow processes, procedures, and work instructions [H.8].

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Lubricate Residual Heat Exchanger Bypass Valves

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a, "Procedures," for the failure to develop lubrication schedules to ensure the reliability of safety-related motor operated valves (MOV). Specifically, the station failed to properly lubricate the residual heat removal B heat exchanger bypass valve E12-MOV-48B which resulted in the failure of the valve to open when demanded during a system restoration alignment. The station repaired the valve, lubricated the torque arm bearing and all potentially affected torque arm bearings on similar motor operated valves, and updated the preventive maintenance procedure to include lubrication of torque arm bearings. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-04327.

The inspectors determined that the failure of the licensee to promptly implement preventive maintenance to lubricate Velan-style MOV torque arm bearings was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance, and adversely affected the cornerstone objective to ensure the availability,

reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, E12-MOV-48B could not have performed its safety function to open upon a low pressure core injection initiation signal, due to the lack of lubrication on the valve's torque arm bearing. The senior resident inspector performed the initial significance determination for the inoperable Division II residual heat removal heat exchanger bypass valve. The inspector used the NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," dated June 19, 2012, to evaluate this issue. The finding required a detailed risk evaluation because it involved the potential loss of a single train of safety equipment for longer than the technical specification allowed outage time. The exposure period was 8 days. A Region IV senior reactor analyst performed a detailed risk evaluation for this issue and determined that the change to the core damage frequency was much less than 1E-6, and therefore the finding was determined to be of very low safety significance (Green). The diverse coolant injection pathways helped to minimize the risk. This performance deficiency occurred in 2000 and, is not reflective of current licensee performance.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Aug 22, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Improper Sequencing of Maintenance of 4160 Vac Circuit Breakers Prior to As-Found Tests

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," which states, in part, "A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents." Specifically, the licensee's preventive maintenance Procedure T429, "ABB 5HK Clean/Inspection," failed to incorporate completion of contact resistance testing prior to maintenance into the preventative maintenance procedures for 4160 Vac circuit breakers as specified by Entergy, the manufacturer, and industry guidance. This condition does not represent an immediate safety concern. This finding has been entered into licensee's corrective action program as Condition Report CR-RBS- 2014-4104.

This performance deficiency was more than minor, and therefore a finding, because, if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the failure to perform contact resistance tests prior to maintenance was a significant programmatic deficiency which would have the potential to cause unacceptable or degraded conditions to go undetected. 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 that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding had a cross-cutting aspect associated with identification in the area of problem identification and resolution because the licensee failed to identify issues completely, accurately, and in a timely manner in accordance with the corrective action program [P.1].

Inspection Report# : [2014007](#) (*pdf*)

Significance:  Aug 22, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Complete and Justify Extension of Preventative Maintenance on Division III 4160 Vac Safety

Related Breakers

The inspectors identified a Green, non-cited violation of Technical Specification 5.4.1, “Procedures,” which states, in part, “Written procedures shall be established, implemented, and maintained, covering the following activities: The applicable procedures recommended in Regulatory Guide 1.33, Appendix A, February 1978.” Regulatory Guide 1.33, Appendix A, Section 9, “Procedures for Performing Maintenance,” paragraph b., requires that preventive maintenance schedules should be developed to specify lubrication schedules, inspections of equipment, and inspection or replacement of parts that have a specific lifetime. Specifically, the licensee failed to implement the six-year cleaning and inspection preventive maintenance for Division III 4160 Vac safety-related circuit breakers, E22-S004-ACB1, E22-S004-ACB2, and E22-S004-ACB4. These conditions do not represent an immediate safety concern. These conditions have been entered into the licensees corrective action program as Condition Reports CR-RBS-2014-4106 and CR-RBS-2014-4108.

This performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment performance attribute of the mitigating systems cornerstone and adversely affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to events to prevent undesirable consequences. Specifically, the licensee’s failure to complete preventive maintenance reduces the reliability and capability of the safety-related circuit breakers. 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 that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding had a cross-cutting aspect associated with design margin in the area of human performance because the licensee did not operate or maintain equipment within design margin and failed to make changes to the margin through a systematic and rigorous process [H.6].

Inspection Report# : [2014007](#) (*pdf*)

Significance:  Aug 22, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform an Adequate Operability Determination for Missed Preventive Maintenance on Safety-Related Circuit Breakers

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, Drawings,” which states, “Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.” Specifically, River Bend Station failed to accomplish operability determination activities in accordance with Procedure EN-OP-104, “Operability Determination Process,” after the licensee identified that safety-related Division III 4160 Vac circuit breakers exceeded their replacement and refurbishment schedule. As an immediate corrective action, the licensee completed a new operability determination, which determined the condition as operable, but degraded/nonconforming, established an interim inspection schedule and established a plan to refurbish the breakers prior to the next refueling outage. This condition has been entered into the licensees corrective action program as Condition Report CR-RBS-2014-3872.

The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment performance attribute of the mitigating system 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 operability determination performed did not consider the degraded condition of the circuit breaker so that effective interim or compensatory measures would be developed to ensure the reliability of the safety-related Division III 4160 Vac circuit breakers. 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 that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding had a cross-cutting aspect associated with conservative bias in the area of human performance because licensee personnel failed to use conservative assumptions and did not verify the validity of the underlying assumptions used in making safety-significant decisions [H.14].

Inspection Report# : [2014007](#) (*pdf*)

Significance:  Aug 22, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Correct Identified Negative Safety Margin in Design Documents for Reactor Core Isolation Cooling Valves under Postulated High Energy Line Break Conditions

The inspectors identified a Green, non-cited violation of 10 CFR 50, Appendix B, Criteria XVI, “Corrective Action,” which states in part, “Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.” Specifically, the licensee failed to correct an identified deficiency in calculations for reactor core isolation cooling steam isolation valves with the design function of closing under High Energy Line Break concurrent with degraded voltage through either a calculation revision or engineering change against the calculation. The licensee’s corrective actions included completing an operability determination with test data to demonstrate operability. This finding was entered into the licensee corrective action program as Condition Report CR-RBS-2014-3977.

The performance deficiency was more than minor, and therefore a finding, because it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of assuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee programmatically failed to update design basis documents to reflect plant modifications. The inspectors identified multiple opportunities for the licensee to correct this condition. 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 that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. The inspectors determined that this finding had a cross-cutting aspect associated with resolution in the area of problem identification and resolution because the licensee failed to take effective corrective actions to address issues in a timely manner commensurate with their safety significance [P.3].

Inspection Report# : [2014007](#) (*pdf*)

Significance:  Jul 08, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Promptly Correct Adverse Conditions associated with Non-cited Violation 05000458/2011008-06

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, which states, “Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.” Specifically, the licensee failed to promptly correct a condition adverse quality by implementing compensatory measures to restore compliance with the standby service water system 30-day mission

requirements pending NRC approval of a license amendment. On July 8, 2014, the licensee implemented compensatory measures to restore compliance to ensure a 30-day inventory in the standby service water system. This issue was entered into the corrective action program as Condition Report CR 2014 3212.

This performance deficiency was more than minor, and therefore a finding, because, if left uncorrected, it would lead to a more significant safety concern. Specifically, the licensee failed to implement compensatory measures to ensure the standby service water system would meet its 30-day mission requirement. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Screening and Characterization of Findings," the finding represented a loss of system safety function in that the ultimate heat sink could not meet its 30-day mission time to provide decay heat removal. Therefore, a detailed risk evaluation was necessary. An assessment was performed in accordance with Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria." The finding was determined to be of very low safety significance (Green) because the frequency of events that would require long term use of the ultimate heat sink is very low and the difference in the failure probability to replenish the ultimate heat sink in 10 days versus 30 days is very small. This was because an early depletion of the inventory would be easily detected and would become a priority. At the time that replenishment would be needed, plant conditions should be stable and local transportation arteries should be restored. This finding has a cross-cutting aspect associated with evaluation in the area of problem identification and resolution because the licensee failed to thoroughly evaluate problems to ensure that resolutions address cause and extent of condition commensurate with their safety significance [P.2].

Inspection Report# : [2014007](#) (pdf)

Significance: G Jun 30, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Follow Tagging Clearance Instructions

The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.4.1.a., "Procedures," for the failure to adhere to procedural requirements to ensure that other fire suppression ring header valves are/are not correctly positioned. Specifically, on May 19, 2014, the licensee failed to follow the specified instructions in tagging clearance 1C16 / 251-001-O-FPW-P1A, to verify that there were no other ring header valves isolated before implementing the clearance, resulting in the inadvertent isolation of the fire protection ring header. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2014-02489.

The failure to follow procedures is a performance deficiency. The performance deficiency is more than minor and, therefore, a finding because it adversely impacted the protection against external factors attribute of the Mitigating System Cornerstone, in that the licensee isolated the fire suppression header to the majority of the plant for approximately 36 hours. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," dated June 19, 2012, the inspectors determined that the issue affected the Mitigating Systems Cornerstone and that the finding pertained to a degraded condition while the plant was in operation. As a result, the inspectors were directed to Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013. The inspectors determined that Appendix F did not address the loss of the fire protection ring header to most of the facility and Appendix F, "Assumptions and Limitations," states "the SDP approach is intended to support the assessment of known issues only in the context of an individual fire area. A systematic plant-wide search and assessment effort is beyond the intended scope of the fire protection SDP." Therefore, a senior reactor analyst (SRA) performed a detailed risk evaluation. The total exposure period was 36 hours. The bounding change to the core damage frequency was $2E-7$ /year. The bounding change to the large early release frequency was $4E-8$ per year. The finding was of very low safety significance (Green). The dominant core damage sequences included a fire-induced loss of offsite power, failure of operators to suppress the fire, and damage to Division I, II, and III components. The reactor core isolation cooling system and the short exposure period helped to minimize the risk. The finding has a cross-cutting aspect in the area of human performance associated with avoiding complacency because the licensee failed to recognize and plan for the possibility for mistakes and did not implement appropriate error

reduction tools [H.12].

Inspection Report# : [2014003](#) (pdf)

Significance:  Apr 28, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure of the Plant Referenced Simulator to Demonstrate Expected Plant Response with Three Examples

Title 10 CFR Part 55.46(c)(1), "Plant-Referenced Simulators," states, in part, "A plant referenced simulator used for the administration of the operating test...must demonstrate expected plant response to operator input and to normal, transient, and emergency conditions to which the simulator has been designed." Contrary to this,

- Operators were unable to open the main steam isolation valves because the River Bend Station simulator did not correctly model the differential pressure across the main steam isolation valves. Because of this, the job performance measure had to be rejected and another developed. This modeling deficiency was entered into the licensee's corrective action program as Condition Report CR-RBS-2014-965.

- On multiple occasions, the River Bend Station simulator randomly initiated a main turbine runback when plant conditions did not warrant this action. After unsuccessful attempts were made to resolve this modeling deficiency, the applicants were briefed to ignore this event should it occur. This modeling deficiency was entered into the licensee's corrective action program as Condition Reports CR-RBS-2014-965 and CR-RBS-2014-1496.

- The River Bend Station simulator initiated a control rod drift during a scenario where plant conditions did not support this response. After identification, the licensee entered the issue into the licensee's corrective action program as Condition Report CR-RBS-2014-1496.

These failures of the plant-referenced simulator to demonstrate expected plant response during conditions to which the simulator has been designed to respond was a performance deficiency. The finding was more than minor 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 could adversely affect the operating crew's ability to assess plant conditions and take actions in accordance with approved procedures. In accordance with NRC Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, and the associated Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)," Block 15, the finding was determined to be of very low safety significance because the deficient simulator performance did not negatively impact operator performance in the actual plant during a reportable event.

Following the operating test, it was discovered the modeling deficiencies were introduced as part of a simulator upgrade more than ten years ago and therefore, are not considered to be a reflection of current performance. The hardware failure associated with the main steam line pressure gauge was determined to have no actual operator impact and was not a generic training issue. Therefore, this finding has no cross-cutting aspect associated with it.

Inspection Report# : [2014301](#) (pdf)

Significance:  Dec 30, 2013

Identified By: NRC

Item Type: VIO Violation

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

The team identified a Green violation of License Condition 2.C.(10) for the failure to implement and maintain in effect all provisions of the approved fire protection program associated with multiple spurious operations concerns. Specifically, the licensee failed to implement all of the required corrective actions for multiple spurious operations

concerns prior to November 2, 2012, which marked the expiration of enforcement discretion for multiple spurious operations contained in Enforcement Guidance Memorandum 09-002. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2013-03465.

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

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

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

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Sep 30, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Provide Positive Exposure Control Within a Locked High Radiation Area

The inspectors identified a non-cited violation of Technical Specification 5.7.2 because a radiation protection technician did not provide positive exposure control to workers entering an area with dose rates greater than 1,000 millirem/hour. Radiation protection representatives removed the workers' radiological controlled area access privileges, counseled the workers, conducted a stand-down meeting, and performed an apparent cause evaluation.

The failure to provide positive control to workers entering an area with dose rates greater than 1,000 millirem/hour is a performance deficiency. The significance of the performance deficiency was more than minor because it was associated with an Occupational Radiation Safety cornerstone attribute (exposure control) and adversely affected the associated cornerstone objective because it allowed workers to be exposed to higher-than-planned radiation dose rates. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable finding because a collective dose threshold was not challenged, (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 has a cross-

cutting aspect in the human performance area, associated with avoiding complacency, because the radiation protection technician did not recognize and plan for the possibility of mistakes by the operators in identifying the correct valve to tag, and the inherent risk of the operators entering an unsurveyed area [H.12].

Inspection Report# : [2014004](#) (*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

Last modified : June 16, 2015