River Bend 1
2Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2009
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Main Steam Line Plug Seal Failure Results in Loss of Reactor Cavity Inventory
A self-revealing noncited violation of 10CFR50 Appendix B, Criterion V, “Instructions, Procedures and Drawings,” was identified for the failure to follow the procedure for making a permanent plant modification and provide adequate procedures for installation and use of the main steam line plugs following a main steam line plug design change. This failure resulted in draining approximately 5,000 gallons of water from the upper reactor cavity pool to the drywell and a manual actuation of low pressure coolant injection to restore cavity pool water level. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2009-4681.

The finding was more than minor in accordance with Inspection Manual Chapter 0612, Appendix B, “Issues Screening,” because the finding affected the initiating events cornerstone attribute of configuration control and the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. The inspectors evaluated the finding in accordance with Inspection Manual Chapter 0609, Appendix G, “Shutdown Operations Significance Determination Process.” The inspectors reviewed Section II.B.(1) of Checklist 7 and determined that the finding required a Phase 2 analysis because the finding involved procedures that affected steam line plug seal configuration and resulted in inventory loss from the upper reactor cavity pool. The senior reactor analyst determined that, because of the special circumstances of this event, the use of a qualitative assessment using Inspection Manual Chapter 0609, Appendix M, was more appropriate than the risk tools provided in Inspection Manual Chapter 0609, Appendix G. This is because the draindown event was self-limiting, such that the inventory excursion could not have drained reactor cavity level below the level of the main steam lines, and that even with the failure of operators to take actions, the core would have remained covered with no challenges to the shutdown cooling system. Therefore, the event in the worst case would have been transparent to the core. Also, the displaced inventory posed no threat to any of the plant's mitigating systems. The inspectors concluded that the finding was of very low safety significance (Green). There is no crosscutting aspect associated with this violation because the finding does not reflect current licensee performance.
Inspection Report# : 2009005 *(pdf)*

Mitigating Systems

Significance: G Jun 02, 2010
Identified By: NRC
Item Type: VIO Violation
Failure to Ensure at Least One Train of Equipment Necessary to Achieve Hot Shutdown Conditions is Free of Fire Damage
The team identified a cited violation of License Condition 2.C.(10), “Fire Protection,” for failing to ensure that the Division 1 standby service water support system to the Division 1 emergency diesel generator, which was required to achieve safe shutdown, was protected such that it remained free from fire damage under all conditions. This condition was identified by the licensee in May 2007, and entered into their corrective action program as a significant non-conforming condition in CR-RBS-2007-02102. The licensee subsequently initiated compensatory measures in the form of manual actions to protect the Division 1 emergency diesel generator. This issue was documented as a licensee-identified noncited violation in Inspection Report 2009002. River Bend has subsequently completed two refueling outages, six forced outages, and one emergency diesel generator work window of sufficient duration since

identification of this condition and failed to correct the non-conformance. The team determined that schedule changes resulted in a new completion date of January 2011.

The failure to ensure that one train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) was free of fire damage and to correct this significant non-conforming condition in a timely manner is a performance deficiency. This performance deficiency was more than minor because it was associated with the protection against external factors (fire) attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events in order to prevent undesirable consequences. The team evaluated this deficiency using Inspection Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” because it affected fire protection defense-in-depth strategies involving post fire safe shutdown systems with plant-wide consequences. A Phase 3 SDP risk assessment was performed by a senior reactor analyst. The bounding change in conditional core damage frequency for a 1-year exposure is the Fire Mitigation Frequency (4.30E-08/year) multiplied by the change in conditional core damage probability (0.9) for a value of 3.87E-08/year. This value indicates the finding has very low safety significance (Green). Because the licensee failed to correct this violation, this violation is being treated as a cited violation, consistent with the NRC Enforcement Policy. This finding had a crosscutting aspect in the Work Control component of the Human Performance area because the licensee did not appropriately plan work activities to support long-term equipment reliability by limiting temporary modifications, operator workarounds, safety systems unavailability, and reliance on manual actions [H.3(b)]. (Section 1R05.01)

Inspection Report# : 2010006 *(pdf)*

Significance:  Jun 02, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure Alternative Shutdown Procedure Could be Implemented as Written
The team identified a noncited violation of Technical Specification 5.4.1.d, “Fire Protection Program Implementation.” Specifically, Procedure AOP-0031 “Shutdown from Outside the Main Control Room,” Revision 307, had steps that could not be implemented as written. Two steps were to be performed before the necessary ac power was available, and two steps required diagnostic assessment without the availability of instrumentation.

The failure to ensure that Procedure AOP-0031, Revision 307 could be implemented as written is a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Attachment 2 to Appendix F, “Fire Protection Significance Determination Process,” this issue was determined to be a safe shutdown finding, and was assigned a degradation rating of Low because the examples involved procedural deficiencies that could be compensated for by operator experience. Since this finding was assigned a low degradation rating, the safety significance screened as very low (Green). This finding was entered into the licensee’s corrective action program as CR-RBS-2010-01592, CR-RBS-2010-01831, CR-RBS-2010-01775, CR-RBS-2010-01821, and CR-RBS-2010-1846. This finding had a crosscutting aspect in the Resources component of the Human Performance area, in that the licensee did not ensure that procedures were complete, accurate, and up to date to assure nuclear safety [H.2.(c)]. (Section 1R05.05.b.1)

Inspection Report# : 2010006 *(pdf)*

Significance:  Jun 02, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement and Maintain in Effect all Provisions of the Approved Fire Protection Program
The team identified a noncited violation of License Condition 2.C.(10), “Fire Protection,” for the failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the team identified, during a timed walkdown of the procedure that it took operators over 6 minutes to isolate feedwater, but the simulator showed that the steam lines could be flooded in 2 minutes. Overfilling the reactor pressure vessel and flooding the main steam lines could make reactor core isolation cooling unavailable. Reactor core isolation cooling was credited

for decay heat removal and inventory control in the event of a fire.

The failure to ensure that feedwater would be isolated prior to overfilling the reactor pressure vessel and flooding the main steam lines making reactor core isolation cooling unavailable is 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,” because it affected fire protection defense-in-depth strategies involving post fire safe shutdown systems with plant-wide consequences. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since it involved a control room fire that led to control room abandonment. The Phase 3 evaluation determined that the finding had very low safety significance because a fire in only one of 109 electrical cabinets in the control room could result in this overfill event. The finding was entered into the licensee’s corrective action program as CR-RBS-2010-01808. The finding did not have a crosscutting aspect since it was not indicative of current performance, in that the licensee had established the incorrect response time more than three years prior to this finding. (Section 1R05.05.b.2)
Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 02, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement and Maintain in Effect all Provisions of the Approved Fire Protection Program
The team identified a noncited violation of License Condition 2.C.(10), “Fire Protection,” related to the licensee's failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, during testing required by the approved fire protection program the licensee failed to adequately test the remote shutdown emergency transfer switch functions used to assure isolation of safe shutdown equipment from the control room in the event of a control room evacuation due to fire. The switch functions had not been adequately tested since 1997.

The failure to ensure isolation from the control room for safe shutdown equipment controlled from the remote shutdown panel during surveillance testing of emergency transfer switches is a performance deficiency. The finding was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone in that 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 the finding using Inspection Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” because it affected fire protection defense-in-depth strategies involving post fire safe shutdown. Using Appendix F, Attachment 2, “Degradation Rating Guidance Specific to Various Fire Protection Program Elements,” the team determined that the finding constituted a low degradation of the safe shutdown area since the control room isolation feature was expected to display nearly the same level of effectiveness and reliability as it would had the degradation not been present. This finding screened as having very low safety significance (Green). This violation was entered into the licensee’s corrective action program as CR-RBS-2010-01783. Because the emergency transfer switch surveillance procedures had been in effect since 1997, there was no crosscutting aspect associated with the violation, in that it is not indicative of current licensee performance. (Section 1R05.05.b.3)
Inspection Report# : 2010006 *(pdf)*

Significance: G Mar 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Evaluate a Revised Equipment Tag Out
A self-revealing noncited violation of Technical Specification 5.4.1.a. was identified for defeating the Division I emergency systems automatic start functions caused by the failure to follow a work implementation and closeout procedure when changing the work scope and tag out boundaries for a safety-related maintenance activity. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2009-06151.

The finding was more than minor because it affected the equipment performance attribute of the mitigating systems cornerstone and affected the availability, reliability, and capability of systems that respond to initiating events to

prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because the finding did not represent an actual loss of safety function. This finding has a crosscutting aspect in the area of human performance, work control because the licensee did not appropriately plan activities by incorporating actions to address operational impact and risk for the work scope changes [H.3(a)].
Inspection Report# : 2010002 *(pdf)*

Significance: G Mar 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Control Building Chiller Operability During Low Service Water Temperatures
The inspectors identified a Green noncited violation of Technical Specification 3.7.3 for exceeding the control room air conditioning system thirty day allowed outage time for one inoperable subsystem and the seven day allowed outage time for two inoperable subsystems and failing to enter Modes 3 and 4, as specified. Specifically, during accident conditions the control building chillers were not able to remove the design basis heat load while operating with low standby cooling water temperatures. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2010-01593, CR-RBS-2010-01817 and CR-RBS-2010-01667.

The performance deficiency was more than minor in accordance with Inspection Manual Chapter 0612, Appendix B, “Issue Disposition Screening,” because the finding was associated with the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability of multiple safety-related systems and components to respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors determined that because the finding resulted in an actual loss of safety function of a single train for greater than its technical specification allowed outage time and required a Phase 2 analysis. However, the Phase 2 presolved table and worksheets did not contain appropriate target sets to estimate accurately the risk impact of the finding. Therefore, the senior reactor analyst performed a Phase 3 analysis. The estimated change in core damage frequency was 2.3E-8/yr. Therefore, the inspectors determined the significance of the finding was Green. This finding was not assigned a crosscutting aspect because it does not reflect current licensee performance.
Inspection Report# : 2010002 *(pdf)*

Significance: G Mar 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Adequately Verify a Suitable Replacement Part Essential for Emergency Diesel Generator Operation
A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified for the failure to adequately verify suitable replacement parts essential to the operation of emergency diesel generator Division I. This resulted in multiple intercooler flange bolts failing from low stress, high cycle fatigue. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2009-06148.

The finding is also similar to example 3j of Manual Chapter 0612 Appendix E. Specifically, the number of bolting failures placed the emergency diesel generator’s operability in doubt and an engineering analysis had to be performed to prove operability. In accordance with Inspection Manual Chapter 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations,” the inspectors performed a significant determination process Phase 1 screening and determined that the finding was of very low safety significance (Green) because a licensee analysis concluded that the bolts that were projected to fail during the emergency diesel generator mission time of thirty days would not result in an actual loss of system safety function. The inspectors determined that the finding had a crosscutting aspect in the area of human performance resources in that the licensee failed to ensure that equipment was adequate for maintaining long term plant safety by maintenance of design margins [H.2(a)].
Inspection Report# : 2010002 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Control Scaffold Construction
The inspectors identified a Green noncited violation of Technical Specification 5.4.1.a for the failure of maintenance personnel to control scaffold erection per procedure. This failure resulted in the licensee installing 31 scaffolds in safety related areas that required either rework or an engineering evaluation to resolve as built deviations from the minimum seismic separation requirements. As a result, the design function of the safety related equipment was potentially adversely affected. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2009-3963.

The failure to erect scaffolds in accordance with procedures is a performance deficiency. This finding is more than minor because it is similar to Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," Section 4, Example a, because Entergy had routinely failed to perform the requisite engineering evaluation and because it was associated with the protection against external events 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 in order to prevent undesirable consequences. The finding was determined to be of very low risk significance (Green) because no actual loss of safety function occurred and the finding did not screen as potentially risk significant due to external events. This finding has a crosscutting aspect in the area of human performance, work practices, because the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported [H.4(c)].
Inspection Report# : 2009004 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Reactor Core Isolation Cooling System Seismic Design
The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to implement measures to ensure that the seismic design basis for the reactor core isolation cooling turbine governor hydraulic system was correctly translated into the specifications, drawings, procedures, or instructions. This resulted in work to reroute the piping and an engineering evaluation to resolve seismic concerns. The licensee entered this issue into their corrective action program as Condition Report CR RBS 2009 3747.

The failure to implement design control features for the seismic design of the reactor core isolation cooling system is a performance deficiency. This finding was more than minor because it is similar to Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," Section 5, Example a, in that the reactor core isolation cooling turbine was returned to service without the seismic spacing required by the original design or completion of an evaluation for the as left condition. This resulted in rework and additional engineering analysis to correctly resolve the seismic qualification concerns. The performance deficiency also affected the mitigating systems cornerstone attribute of external events and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events in order to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Attachment A, "Phase 1 – Initial Screening and Characterization of Findings," for the mitigating systems cornerstone. After answering "no" to all five questions in the mitigating systems cornerstone column of Table 4a, "Characterization Worksheet for Initiating Events, Mitigating Systems, and Barrier Integrity Cornerstones," the inspectors concluded that the finding was of very low safety significance. This finding does not have a crosscutting aspect because the performance deficiency occurred in 1989 and is not reflective of current plant performance.
Inspection Report# : 2009004 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure Standby Liquid Control System Test Tank Remained Drained
The inspectors identified a Green noncited violation of Technical Specification 5.4.1.a for the failure of operations personnel to provide adequate procedural guidance to preclude water intrusion into the nonseismically qualified standby liquid control system test tank which resulted in the degradation of both trains of the standby liquid control system. The licensee entered this issue into their corrective action program as Condition Report CR RBS 2009 3862.

The failure to provide appropriate procedures to keep the standby liquid control test tank drained is a performance deficiency. The finding is more than minor because it affects the protection against external events attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems responding to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because the finding was not a design or qualification deficiency, did not represent a loss of a system/train safety function, and did not screen as potentially risk significant due to external events. This finding has a crosscutting aspect in the area of problem identification and resolution's corrective action program because the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. Specifically, the licensee failed to address the cause of inadvertent water intrusion into the standby liquid control test tank in a timely manner to prevent the common mode failure of both trains of standby liquid control [P.1(d)].
Inspection Report# : 2009004 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Containment Closure Procedure
The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of operations personnel to fully implement a station procedure to control obstructions in primary containment openings in Modes 4 and 5. The failure to follow procedure challenged the licensee's ability to establish containment closure. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2009-4296.

The failure to implement the containment closure procedure is a performance deficiency. This finding is more than minor because it affected the configuration control attribute of the barrier integrity objective to provide reasonable assurance that the physical design barriers (containment) will protect the public from radionuclide releases. Using Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," the finding was assessed as a Type B finding because it is related to a degraded condition that has potentially important implications for the integrity of the containment without affecting the likelihood of core damage and was of very low significance because the licensee did not lose the capability to close containment when planned. The finding has a crosscutting aspect in the area of human performance, work control, because the licensee failed to appropriately coordinate work activities (identifying cables, quick disconnects, removing unidentified cables) to address the operational impact of those work activities on containment operability [H.3(b)].
Inspection Report# : 2009004 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Dec 31, 2009
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to Ensure the Emergency Contact had Knowledge About a Shipment
The inspectors identified a noncited violation of 10 CFR 71.5 and 49 CFR Part 172.604(a) for a failure to ensure that the shift manager, whose phone number was listed as the required 24-hour emergency phone number on shipping documents, was knowledgeable about the radioactive waste shipment that left site on December 16, 2009, and had immediate access to a person who had specific information on the shipment. Specifically, the shift manager was listed as the required 24-hour contact; however, the shift managers (on multiple shifts) were not provided with documentation or information about the shipments that left the site on December 16, 2009. Although the shift manager would have eventually contacted a knowledgeable person, this delay would not have resulted in immediate access to the person with information related to the shipment. The licensee immediately provided the shift manager a copy of the shipping documentation, briefed the shift manager, and entered this issue into their corrective action program as Condition Report CR-RBS-2009-06419.

This performance deficiency was more than minor because it adversely affected the public radiation safety cornerstone to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain in that the failure to have shipment information immediately available could restrict the actions of fire department and/or rescue personnel responding to an accident. When processed through the Public Radiation Safety Determination Process, the finding was determined to be of very low safety significance because the finding: (1) was associated with radioactive material control, (2) involved the licensee's program for radioactive material transportation, (3) did not cause radiation limits to be exceeded, (4) did not involve a breach of package during transit, (5) did not involve a certificate of compliance finding, (6) did not involve a low level burial ground nonconformance, and (7) did not involve a failure to make notifications. The inspectors determined the finding had a crosscutting aspect in area of resources, associated with documentation, because the licensee's procedures did not provide guidance on informing the control room about shipments and thus, the procedures were not complete, accurate nor up-to-date [H.2 (c)].
Inspection Report# : 2009005 *(pdf)*

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : September 02, 2010