Callaway
1Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Sep 22, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Maintenance Instructions Affecting the Letdown Backpressure Control Valve.
A self-revealing Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified after the licensee failed to follow reassembly procedures for the letdown system backpressure control valve. In April 2007, during reassembly of letdown pressure control Valve BGPCV0131, Callaway maintenance personnel failed to install an alignment cage spacer. On September 7, 2007, a failed pressure transmitter combined with malfunctioning Valve BGPCV0131 caused upstream letdown relief Valve BG8117 to lift, diverting water into the pressurizer relief tank at a rate of 119 gpm until operators isolated letdown to stop the leakage.

This finding is greater than minor because, similar to Example 5b provided in Manual Chapter 0612, Appendix E, the licensee's failure to follow assembly procedures resulted in Valve BGPCV0131 being returned to service with a missing part. This finding, involving reactor coolant system letdown, affected the initiating events cornerstone equipment performance attribute and affected the objective to limit the likelihood of those events that upset plant stability and challenged critical safety functions during power operations. The inspectors used the Manual Chapter 0609, "Significant Determination Process," Phase 1 worksheet to analyze this finding. The inspectors determined this finding is of very low safety significance because it did not result in exceeding the Technical Specification limit for identified reactor coolant system leakage and did not affect any mitigating systems. This finding has a crosscutting aspect in the area of human performance associated with the work practices component because licensee personnel failed to follow established procedures (H.4(b)). This issue was entered into the licensee's corrective action program as Callaway Action Request 200708233.
Inspection Report# : 2007004 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Needed Test Conditions to Satisfy Technical Specification Surveillance Requirement 3.8.1.18
The inspectors identified a Green noncited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," after AmerenUE confirmed that the load shedding emergency load sequencing test could not demonstrate that component cooling water pump breakers would perform satisfactorily in service. On November 19, 2007, AmerenUE determined that quantitative data did not exist to support that component cooling water pump breakers would be capable of closing at Step 1 (5 seconds) of the load shedding emergency load sequence. Technical Specification Surveillance Requirement 3.8.1.18, testing of the emergency load sequencing, required the licensee to verify that load blocks are actuated within +/-10 percent of the specified start time.

This finding, failure to correctly test 4 kV essential bus loading, is more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective to ensure availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was determined to have very low safety significance because it was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent a loss of safety function of a single train for

greater than its Technical Specification allowed outage time and did not affect seismic, flooding, or severe weather initiating events. This finding was evaluated as not having a crosscutting aspect because it was not reflective of current licensee performance.
Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Manage Increased Risk During a Maintenance Activity
The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(4) after AmerenUE operating personnel failed to implement prescribed risk management actions associated with maintenance on the Train B emergency diesel generator. NRC inspectors performed a walkdown of the risk management actions prescribed and noted the omission of the measures to protect the turbine-driven auxiliary feedwater pump. AmerenUE's review determined that operators failed to follow work instructions to post the protective measure.

This finding is greater than minor because it was related to maintenance risk management, the overall plant risk assessed was greater than 1.0 E-6 and the licensee failed to implement some prescribed significant compensatory measures. Using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 2, "Assessment of Risk Management Actions," the inspectors determined this finding to be of very low safety significance because other risk management actions were taken. This finding has a crosscutting aspect in the area of human performance associated with the work practices component because operating personnel did not follow instructions to implement the licensee's prescribed risk management actions.
Inspection Report# : 2007005 *(pdf)*

Significance: G Sep 22, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Promptly Correct a Condition Adverse to Quality for Train B Motor-driven Auxiliary Feedwater Pump
A self-revealing Green noncited violation of 10 CFR 50, Appendix B, Criteria XVI, "Corrective Action," was identified after the licensee allowed the Train B motor-driven auxiliary feedwater pump to be returned to service even though maintenance personnel could not meet the coupling shaft separation tolerance during a maintenance activity on April 12, 2007. Engineering personnel approved deviating from the coupling shaft separation tolerance without considering the impact on the motor thrust bearing. On July 4, 2007, motor disassembly revealed that there was damage to the thrust bearing caused by the inadequate shaft separation distance.

This finding is greater than minor because, similar to Example 5b provided in Manual Chapter 0612, Appendix E, the licensee's failure to address the impact of plant changes allowed the component to be returned to service prior to correcting the problem. This finding was associated with the mitigating systems cornerstone equipment performance attribute and affected the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors used the Manual Chapter 0609, "Significant Determination Process," Phase 1 worksheet to analyze this finding. The inspectors determined this finding is of very low safety significance because it is not a design or qualification deficiency confirmed to result in loss of operability per Part 9900, Technical Guidance, "Operability Determination Process for Operability and Functional Assessment;" did not result in loss-of-safety function of a single train for greater than the Technical Specification allowed outage time; and was not a potentially risk significant seismic, flooding, or severe weather event. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because engineering personnel did not thoroughly evaluate the apparent problem with the coupling (P.1 (c)). This issue was entered into the licensee's corrective action program as Callaway Action Request 200708752.
Inspection Report# : 2007004 *(pdf)*

Significance: G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Ineffective Corrective Actions to Evaluate the Design Basis for an Ultimate Heat Sink Workaround

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” after AmerenUE failed to implement effective corrective actions to correct discrepancies in the ultimate heat sink design basis. The system design basis required the ultimate heat sink automated temperature controller to align the cooling tower only when outside temperatures were above 80 degrees Fahrenheit. AmerenUE allowed manual operation of the system when temperatures were above 47 degrees Fahrenheit. The engineering staff and later the quality assurance staff independently identified that the design basis operating requirements had not been adequately evaluated. The inspectors identified that the corrective actions assigned had been closed out as complete without problem resolution and that the ultimate heat sink cooling towers were operated on April 3, 2007, when outside conditions were below 29 degrees Fahrenheit. The uncontrolled workaround resulted in AmerenUE subjecting the cooling tower fill material and fan to freezing conditions.

This finding is greater than minor because it is associated with the mitigating systems cornerstone equipment performance attribute and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 worksheet, this finding was determined to have very low safety significance because it affected the mitigating systems cornerstone, which was both a performance and design deficiency that did not represent a loss of a safety function, and did not affect seismic, flooding or severe weather initiating events. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not thoroughly evaluate problems such that the resolution would address causes and extent of conditions, as necessary (P.1(c)). This issue was entered into the licensee's corrective action program as Callaway Action Request 200703584.
Inspection Report# : 2007003 *(pdf)*

Significance: G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify and Correct Essential Service Water Pipe Wall Thinning
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” after AmerenUE’s past corrective actions were inadequate to identify and correct essential service water piping degradation due to corrosion. AmerenUE identified that nondestructive examinations were required to determine the extent of condition of microbiological influenced corrosion on the 30-inch and 8-inch essential service water piping. On May 3, 2007, operability determinations used to support Refueling Outage 15 restart stated that 100 percent of the low flow area accessible piping would be tested using nondestructive examination. On May 26, 2007, microbiological influenced corrosion caused a new through-wall leak in the control building low flow, accessible piping. The licensee’s extent of condition review was not adequate to identify the corroded pipe prior to the through-wall leak.

This finding, associated with failure to implement corrective action, is greater than minor because, if left uncorrected, this finding would become a more significant safety concern. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 worksheet, this finding was determined to have very low safety significance because it affected the mitigating systems cornerstone, was both a performance and design deficiency that did not represent a loss of a safety function, and did not affect seismic, flooding or severe weather initiating events. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not thoroughly evaluate problems such that the resolution would address causes and extent of conditions, as necessary (P.1(c)). This issue was entered into the licensee's corrective action program as Callaway Action Request 200705489.
Inspection Report# : 2007003 *(pdf)*

Barrier Integrity

Significance: G Mar 14, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Nonconservative Technical Specification for Battery Inter-cell Connection Resistances

Inspection Report# : 2008006 *(pdf)*

Significance: G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Foreign Material Controls for the Refueling Cavity with Reactor Head Removed
The inspectors identified a noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," after refueling personnel did not maintain procedurally required foreign material exclusion barriers. AmerenUE's foreign material exclusion procedure specified attaching foreign material exclusion curtains to the plant north end of the reactor head missile shield to ensure no foreign material was introduced into the reactor vessel. On April 19, 2007, the inspectors observed the reactor refueling task and noted that there were no curtains acting as the north refueling cavity boundary.

This finding is greater than minor because, if left uncorrected, introduction of foreign material into the reactor cavity would become a more significant safety concern. The barrier integrity cornerstone human performance attribute is used to ensure foreign material and loose parts do not challenge fuel cladding. The inspectors determined this finding to be of very low safety significance using the significance determination process for at-power reactor situations. The inspectors used the at-power significance determination process because of the concern with foreign material impact on an operating reactor core. This finding is of very low safety significance per Inspection Manual Chapter 0609 because the condition was a fuel barrier issue. This finding had a crosscutting aspect in the area of human performance associated with the resources component because plant operators failed to follow procedures established to prevent the introduction of foreign material into the reactor vessel (H.4(b)). This issue was entered into the licensee's corrective action program as Callaway Action Request 200704169.
Inspection Report# : 2007003 *(pdf)*

Emergency Preparedness

Significance: G Aug 10, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee Practices Allow Protective Action Recommendations for Areas Where Protective Action Guides are not Exceeded.
The inspectors identified a noncited violation of 10 CFR 50.54(q), 50.47(b)(10), and 10 CFR Part 50, Appendix E, IV (B), for practices that require licensee protective action recommendations to be made for areas offsite that are not affected by the radiological release, contrary to federal guidance. Programmatic expectations (including on-the-job training) to recommend offsite protective actions for the public in areas where dose assessment has not identified that protective action guides are exceeded is a performance deficiency.

This finding is more than minor because it is not similar to the examples of Manual Chapter 0612, Appendix E, and has the potential to impact public safety. This finding is of very low safety significance because it is a failure to comply with NRC requirements, is associated with Emergency Preparedness Planning Standard 50.47(b)(10), is associated with a risk significant planning standard as defined in Manual Chapter 0609, Appendix B, and is not a risk significant planning standard functional failure or risk significant planning standard degraded function because appropriate licensee protective action recommendations in accordance with federal guidance would be issued for all areas of the emergency planning zone where Protective Action Guides are identified as exceeded. This finding is a noncited violation of 10 CFR 50.54(q) and 50.47(b)(10). The licensee has entered this issue into their corrective action system as Callaway Action Request 200707375. This finding was evaluated as not having a crosscutting aspect.
Inspection Report# : 2007005 *(pdf)*

Occupational Radiation Safety

Significance: G Oct 05, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Adhere to a Radiation Work Permit Requirement
The inspectors reviewed a self-revealing, noncited violation of a Technical Specification 5.4.1.a. required procedure that resulted in the external contamination of a work group with two of the four workers receiving internal contamination. Specifically, a work group alarmed the personnel contamination monitors while exiting the Radiological Control Area. The licensee investigated the event and determined that the workers did not use the faceshields as required by their radiation work permit and that the radiation protection technician failed to recognize that the workers did not have them. As corrective action, the licensee developed a plant systems job aid for new and supplemental radiation protection technicians, added the event as operating experience to radiation protection and radiation worker training, and implemented disciplinary action.

The failure to adhere to a radiation work permit requirement is a performance deficiency. This finding is more than minor because it is associated with the occupational radiation safety exposure control attribute and affected the cornerstone objective to ensure the adequate protection of the worker health and safety from unnecessary exposure to radiation. The failure to adhere to a radiation work permit requirement lead to workers' unintended and additional personnel exposure. The finding was determined to be of very low safety significance because it did not involve: (1) as low as reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding has a human performance crosscutting component with an aspect of work practices in human error prevention techniques because the workers did not use peer- and self-checking to ensure the radiation work permit required protective equipment was used.
Inspection Report# : 2007005 *(pdf)*

Significance: G Oct 05, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to notify radiation protection of an electronic dosimeter alarm.
The inspectors reviewed a self-revealing, noncited violation of a Technical Specification 5.4.1.a. required procedure that resulted when mechanical maintenance workers did not report electronic dosimeter alarms when received. Specifically, during troubleshooting of a waste gas compressor failure, two mechanical maintenance workers received an electronic dosimeter dose rate alarm. The workers exited the room, checked their dosimeters for a dose alarm, determined the noise was due to the compressor and returned to work as no worker had a visible dose alarm. The workers failed to recognize that the electronic dosimeters would not hold and display a dose rate alarm once out of the elevated radiation field. The workers did not notify radiation protection of the electronic dosimeter alarms. When exiting the radiological control area, the electronic dosimeter system alerted the workers to the alarms and barred them from the radiological control area for further entries. As corrective action, the workers were coached on expected dosimeter alarm response and the mechanical maintenance supervisor discussed the event during their group meeting as a learning experience.

The failure to notify radiation protection of an electronic dosimeter alarm is a performance deficiency. This finding is more than minor because it is associated with the occupational radiation safety exposure control attribute and affected the cornerstone objective to ensure the adequate protection of the worker health and safety from unnecessary exposure to radiation. The failure to notify radiation protection in the event of an electronic dosimeter alarm could lead to a worker's unintended and additional personnel exposure. The finding was determined to be of very low safety significance because it did not involve: (1) as low as reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding has a human performance crosscutting component with an aspect of work practices in human error prevention techniques because the workers proceeded in the face of uncertainty or unexpected circumstances when dose rate alarms were received.
Inspection Report# : 2007005 *(pdf)*

Public Radiation Safety

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

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