



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-4125

November 3, 2010

Mr. Adam C. Heflin, Senior Vice
President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

Subject: CALLAWAY PLANT - NRC INTEGRATED INSPECTION REPORT 05000483/2010004

Dear Mr. Heflin:

On September 23, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Callaway Plant. The enclosed integrated inspection report documents the inspection findings, which were discussed on September 22, 2010, with Mr. D. Neterer, Plant Director, and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents two NRC-identified findings of very low safety significance (one Green and one Severity Level IV). These findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations, consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the violations or the significance of the noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Callaway Plant facility. In addition, if you disagree with the crosscutting aspects assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at the Callaway Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, and its enclosure, will be available electronically for public inspection in the NRC Public Document

Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Donald B. Allen, Branch Chief
Project Branch B
Division of Reactor Projects

Docket: 50-483
License: NPF-30

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NRC Inspection Report 05000483/2010004
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000483

License: NPF-30

Report: 05000483/2010004

Licensee: Union Electric Company

Facility: Callaway Plant

Location: Junction Highway CC and Highway O
Fulton, MO

Dates: June 24 through September 23, 2010

Inspectors: D. Dumbacher, Senior Resident Inspector
J. Groom, Resident Inspector
Paul Elkmann, Senior Emergency Preparedness Inspector

Approved By: Donald B. Allen, Branch Chief, Project Branch B
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000483/2010004; 06/24/2010-09/23/2010; Callaway Plant, Integrated Resident and Regional Report, Operability Evaluations, Event Follow-up

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspection by a region based inspector. Two noncited violations, one Green and one Severity Level IV, were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Crosscutting aspects are determined using Inspection Manual Chapter 0310, "Components within the Cross Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Barrier Integrity

- Green. The inspectors identified a green noncited violation of Technical Specification 3.6.3, "Containment Isolation Valves," after the licensee failed to implement adequate administrative controls following the failure of valve EGHV0059. On August 10, 2010, containment isolation valve EGHV0059 failed to indicate full closed in the control room. The licensee declared the valve inoperable and isolated the affected penetration flow path. To ensure reactor coolant pump cooling the licensee unisolated the penetration by opening valve EGHV0131 and placing it under administrative controls. The on-shift operations technician was assigned to isolate the penetration in the event containment isolation was required. The resident inspectors found the licensee's administrative controls were not consistent with the requirements in the technical specification bases which required a dedicated operator at the valve. The licensee then stationed a dedicated operator at valve EGHV0131 while repairs were conducted on valve EGHV0059. This issue was entered into the licensee's corrective action program as Callaway Action Request 201007644.

This finding is more than minor because it was associated with the Barrier Integrity Cornerstone attribute of procedural quality and affects the associated cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the issue was determined to represent an actual open pathway in the physical integrity of reactor containment. Using Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," the issue was determined to be a Type B finding of very low safety significance since the containment penetration was associated with a closed system and would generally not contribute to large early release frequency. This

finding has a crosscutting aspect in the area of human performance associated with the resources component because the licensee failed to ensure procedures used for addressing administrative controls were accurate and consistent with the technical specification bases [H.2(c)] (Section 1R15).

Cornerstone: Mitigating Systems

- Severity Level IV. The inspectors identified a Severity Level IV noncited violation of 10 CFR 50.73(a)(2)(v), "Licensee Event Report System," for failure to report simultaneous inoperability of two steam generator atmospheric steam dump valves as a condition that could have prevented fulfillment of a safety function. On February 8, 2010, AmerenUE submitted Licensee Event Report 05000483/2009-005-00 to document that steam generator atmospheric steam dump valve ABPV0002 was out of service longer than allowed by Technical Specification 3.7.4, "Atmospheric Steam Dump Valves (ASDs)." The licensee event report also documented a period where valve ABPV0002 inoperability overlapped the inoperability of steam generator atmospheric steam dump valve ABPV0003. Callaway Final Safety Analysis Report Section 15.6.3.2.2.p. stated that all three intact steam generator atmospheric steam dump valves are credited in the cool down for a steam generator tube rupture. The inspectors determined that the licensee failed to adequately evaluate the reportability of having simultaneous inoperability of two steam generator atmospheric steam dump valves as a safety system functional failure. This issue was entered into the licensee's corrective action program as Callaway Action Request 201006086 and on September 29, 2010, the licensee submitted Licensee Event Report 05000483/2009-005-001 to correct the reporting error.

This finding affects the Mitigating Systems Cornerstone and is greater than minor because the NRC relies on licensees to identify and report conditions or events meeting the criteria specified in the regulations in order to perform its regulatory function. Because this issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process. Consistent with the guidance in Section IV.A.3 and Supplement I, Paragraph D.4, of the NRC Enforcement Policy, this finding was determined to be a Severity Level IV noncited violation. This finding has no crosscutting aspect as it was strictly associated with a traditional enforcement violation (Section 40A3).

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

AmerenUE operated the Callaway Plant near 100 percent for the entire inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for July 10, 2010, the inspectors reviewed the plant personnel's overall preparations/protection for the expected weather conditions. On July 10, 2010, the inspectors walked down the condensate storage and refueling water storage systems because their safety-related functions could be affected, or required, as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the plant staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Final Safety Analysis Report and performance requirements for the systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures.

These activities constitute completion of one readiness for impending adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

.2 Readiness to Cope with External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Final Safety Analysis Report for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, on September 1, 2010, the inspectors performed an inspection of the plant intake structure area to identify any modification to the site that would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier.

These activities constitute completion of one external flooding sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignments (71111.04)

Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- July 22, 2010, NK class 1E battery systems
- August 3, 2010, EN containment spray system train A
- August 12, 2010, AL auxiliary feedwater system with focus on feedwater line break accident

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Final Safety Analysis Report, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected accessible portions of the systems to verify

system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- June 30, 2010, Fire Area A-4, room 1110, train B containment spray pump room
- July 14, 2010, Fire Area C-9, room 3301, engineered safeguards feature switchgear room north
- July 19, 2010, Fire pump house
- August 16, 2010, Fire Area A-30, rooms 1305, 1328 and 1330, auxiliary feedwater pump valve compartments
- September 9, 2010, Fire Area UNCT, room U301, train A ultimate heat sink switchgear room
- September 9, 2010, Fire Areas UNPH and USPH, rooms U104 and U105, essential service water pump rooms

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented

adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. The inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On September 13, 2010, the inspectors observed a fire brigade activation to combat an outside fire near incoming offsite power lines and the safety related warehouse. The observation evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) utilization of preplanned strategies; (7) adherence to the preplanned drill scenario; and (8) drill objectives.

These activities constitute completion of one annual fire-protection inspection sample as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On July 13 and 15, 2010, the inspectors observed different crews of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems and training was being conducted in accordance with licensee procedures. Simulator scenario DS-25 was observed on July 15 demonstrating response to a faulted ruptured steam generator with one main steam isolation valve failure. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to preestablished operator action expectations and successful critical task completion requirements.

These activities constitute completion of two quarterly licensed-operator requalification program samples as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- July 20, 2010, Evaluations related to N-16 radiation monitor failures, Callaway Action Request 201005782

- August 17, 2010, Evaluation of control issues with valve BGFCV0121, Callaway Action Requests 200906288 and 201006721

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- August 17, 2010, Planned elevated risk during train A emergency diesel generator outage to repair a non-original equipment manufacturer gasket
- August 23, 2010, Planned elevated risk during the turbine-driven auxiliary feedwater pump outage for lubrication of the trip throttle valve
- September 14, 2010, Planned elevated risk during train A essential service water outage

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- July 30, 2010, Operability evaluation for the ultimate heat sink pond following loss of train B ultimate heat sink fans, Callaway Action Request 201007277

- August 12, 2010, Operability evaluation for containment penetration 75 following failure of valve EGHV0059, Callaway Action Request 201007644
- August 26, 2010, Operability evaluation for stuck number 14 cylinder fuel rack on train B emergency diesel generator, Callaway Action Request 201008153

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and the Final Safety Analysis Report to the licensee personnel's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three operability evaluations inspection samples as defined in Inspection Procedure 71111.15-04

b. Findings

Introduction. The inspectors identified a green noncited violation of Technical Specification 3.6.3, "Containment Isolation Valves," after the licensee failed to implement adequate administrative controls following the failure of valve EGHV0059.

Discussion. On August 10, 2010, Callaway Plant operators performed Procedure OSP-EG-V002A, "CCW Train A Containment Isolation Valve Inservice Test." During performance of the test, component cooling water return containment outer isolation valve EGHV0059 failed to indicate full closed in the control room. During restroke of the valve, loud noises were heard from the Limitorque operator and actuator power was lost due to tripped thermal overloads. The licensee declared the valve inoperable and entered Technical Specification 3.6.3, Action A.1, which required the licensee to isolate the affected penetration flow path by use of at least one closed and deactivated automatic valve within four hours. The licensee verified valve EGHV0059 shut and deactivated to meet the requirements of Technical Specification 3.6.3. Since component cooling water flow to containment is needed to operate at power, the licensee elected to unisolate the penetration flow path under administrative controls by opening valve EGHV0131, the bypass around EGHV0059. Since EGHV0131 does not receive an automatic containment isolation signal, a dedicated on-shift operations technician was stationed in the auxiliary building.

The resident inspectors reviewed the licensee's administrative controls to comply with Technical Specification 3.6.3. The technical specification bases required administrative controls to station a dedicated operator at the valve controls in continuous communication with the control room. This is required so that the penetration can be rapidly isolated when a need for containment isolation is indicated. The Callaway Final Safety Analysis Report, Figure 6.2.4-1, Containment Penetration P-75, indicated a maximum stroke time for EGHV0059 of 30 seconds. Based on the guidance in the technical specification bases and the documented maximum stroke time of 30 seconds, the inspectors questioned if using the auxiliary building equipment operator was adequate. Following discussions with the operations staff, the inspector learned that, just prior to the inspector's challenge, the licensee's nuclear oversight department had questioned the adequacy of the prescribed administrative controls. The operations staff had dismissed the questioning by nuclear oversight as not an issue since they believed Procedure OTO-EG-00001, "CCW System Malfunction," only required a dedicated operator stationed in the main control room and not locally at the valve.

Subsequently the issue was reviewed by the Callaway licensing staff who confirmed that the administrative controls were not consistent with the requirements outlined in the technical specification bases. To restore compliance with the plant's technical specifications the licensee stationed a dedicated operator at valve EGHV0131 while repairs were conducted on valve EGHV0059.

Analysis. The performance deficiency associated with this finding involved the licensee's failure to implement adequate administrative controls following the failure of valve EGHV0059. This finding is more than minor because it was associated with the Barrier Integrity Cornerstone attribute of procedural quality and affects the associated cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the issue was determined to represent an actual open pathway in the physical integrity of reactor containment. Using Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," the issue was determined to be a Type B finding since the inoperable penetration would have no impact on the determination of Δ CDF but could be potentially important to Δ LERF. Using Table 4.1, "Containment-Related SSCs Considered for LERF Implications," the finding was determined to be of very low safety significance since the containment penetration was associated with a closed system which would generally not contribute to LERF. This finding has a crosscutting aspect in the area of human performance associated with the resources component because the licensee failed to ensure procedures used for addressing administrative controls were accurate and consistent with the technical specification bases [H.2(c)].

Enforcement. Technical Specification 3.6.3, Action A.1, requires that for an inoperable containment isolation valve, the licensee isolate the affected penetration flow path by use of at least one closed and deactivated automatic valve within four hours. The technical specifications do allow for a penetration flow path to be unisolated intermittently under administrative controls. Contrary to the above, on August 10, 2010,

the licensee unisolated containment penetration P-75 but did not implement adequate administrative controls consistent with the technical specification bases. Because of the very low safety significance of this finding and because the issue was entered into the licensee's corrective action program as Callaway Action Request 201007644, it is being treated as a noncited violation, consistent with Section VI.A.1 of the Enforcement Policy: NCV 05000483/2010004-01, "Failure to Implement Adequate Administrative Controls for Failed Containment Isolation Valve."

1R18 Plant Modifications (71111.18)

Permanent Modifications

a. Inspection Scope

The inspectors reviewed key affected parameters associated with energy needs, materials, replacement components, timing, heat removal, control signals, equipment protection from hazards, operations, flow paths, pressure boundary, ventilation boundary, structural, process medium properties, licensing basis, and failure modes for the permanent modifications listed below:

- July 8, 2010, MP 10-0032, Installation of Nonsafety Auxiliary Feedwater Pump

The inspectors verified that modification preparation, staging, and implementation did not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; postmodification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur; systems, structures and components' performance characteristics still meet the design basis; the modification design assumptions were appropriate; the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample for permanent plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following postmaintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- July 30, 2010, Postmaintenance test of train B ultimate heat sink cooling tower fans following Agastat relay failure, Job 10006029
- August 18, 2010, Postmaintenance test of train A emergency diesel generator following planned maintenance on the jacket water system, Jobs 10006534 and 10511574
- September 15, 2010, Postmaintenance test of train A essential service water pump, Jobs 10000026 and 10513774

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following:

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the Final Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Final Safety Analysis Report, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- July 6, 2010, reactor coolant system leakage detection, Surveillance Procedure OSP-BB-0009
- July 15, 2010, routine surveillance of the train A load shed emergency load sequencer test, Job 10509762
- July 15, 2010, routine surveillance of special nuclear material in the spent fuel pool, Job 09508572
- August 18, 2010, inservice test of the train A residual heat removal pump, Job 10509612

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four total surveillance testing inspection samples (two routine, one inservice test, and one reactor coolant system leak rate) as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

Cornerstones: Emergency Preparedness

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

The inspectors discussed with licensee staff the status of the offsite siren and tone alert radio systems to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50, Appendix E. The licensee's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; FEMA Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," and the licensee's current FEMA-approved alert and notification system design report, "Alert and Notification System Design Report," January 2007 revision. The inspectors also observed a routine test of the alert and notification system conducted on September 14, 2010. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.02-05.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspectors discussed with licensee staff the status of primary and backup systems for augmenting the on-shift emergency response staff to determine the adequacy of licensee methods for staffing emergency response facilities in accordance with their emergency plan. The inspectors reviewed licensee procedures and the results of eight quarterly augmentation system tests to evaluate the licensee's ability to staff the emergency response facilities in accordance with their emergency plan and the requirements of 10 CFR Part 50, Appendix E. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.03-05.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

During the on-site inspection, the inspectors reviewed five licensee evaluations of changes to emergency plan implementing procedures performed between September 2008 and August 2010. These reviews were evaluated against the criteria of Procedure KDP-ZZ-00400, "RERP Impact Evaluations and Changes," Revision 16, to determine the licensee's ability to make changes to their emergency plan and emergency plan implementing procedures in accordance with the requirements of 10 CFR 50.54(q). These five licensee evaluations are counted as one sample.

The inspectors also performed an in-office review of changes to the following five documents each of which counts as one sample:

- Callaway Plant Radiological Emergency Response Plan, Revision 36
- Procedure EIP-ZZ-00101, "Classification of Emergencies," Revision 47
- Addendum 1 to Procedure EIP-ZZ-00101, "Emergency Action Level Classification Matrix," Revision 1
- Addendum 2 to Procedure EIP-ZZ-00101, "Emergency Action Level Technical Bases Document," Revisions 2 and 3

The revisions to the Radiological Emergency Response Plan:

- Defined 39 additional terms
- Updated the Emergency Action Level Classification Matrix to be consistent with Addendum 2 to Procedure EIP-ZZ-00101, "Emergency Action Level Technical Bases Document"
- Clarified that licensee personnel acting as the emergency coordinator in the plant control room must possess a senior reactor operator license

The revisions to Procedure EIP-ZZ-00101:

- Relocated definitions used in classifying an emergency from Procedure EIP-ZZ-00101 to the Emergency Action Level Technical Bases Document
- Reworded the note prior to Step 5.5 concerning the discovery of an emergency condition after the condition no longer applies, to be consistent with the wording

of Section 3.1.1 of NUREG-1022, "Event Reporting Guidelines," Revision 2, October 2000

The revisions to the Emergency Action Level Classification Matrix and Technical Bases Document:

- Added definitions for 13 terms
- Reworded Step 2.9 concerning the discovery of an emergency condition after the condition no longer applies, to be consistent with the wording of Section 3.1.1 of NUREG-1022, "Event Reporting Guidelines," Revision 2, October 2000
- Revised the dose equivalent iodine-131 values in Emergency Action Level SU5.1, "Coolant Activity Greater Than Any of the Following," from 60 $\mu\text{Ci/g}$ to 45 $\mu\text{Ci/g}$, and from 1.0 $\mu\text{Ci/g}$ for more than a 48-hour continuous period to 0.75 $\mu\text{Ci/g}$ for more than a 48-hour continuous period, to be consistent with the standing order, "Restoration of Technical Specification 3.7.4, Completion Times for Atmospheric Steam Dumps"
- Revised the technical basis for Emergency Action Level SU6.1, "Unidentified or Pressure Boundary Leakage Greater Than 10 gpm, or, Identified Leakage Greater Than 25 gpm," to clarify that isolable intersystem leakage is not classifiable under this emergency action level. However, leakage from an operating train of residual heat removal being used for core cooling is classifiable using this emergency action level
- Made minor editorial corrections and changes to terminology

These revisions were compared to their previous revisions, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, to Nuclear Energy Institute Report 99-01, "Emergency Action Level Methodology," Revision 4, and to the standards in 10 CFR 50.47(b) to determine if the revisions adequately implemented the requirements of 10 CFR 50.54(q). These reviews were not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection.

These activities constitute completion of six samples as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program requirements in Procedure APA-ZZ-00500, "Corrective Action Program," Revision 51, and its associated appendices. The inspectors reviewed a summary report of the Callaway action requests (corrective action program documents) assigned to the emergency preparedness department and emergency response organization between September 1, 2008, and July 19, 2010, and selected twenty-one for detailed review against the program requirements. The inspectors evaluated the response to the corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements, planning standard 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E. The inspectors also observed a licensee drill conducted on September 15, 2010, and the subsequent technical support center critique to evaluate the licensee's ability to critique emergency response organization performance. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.05-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill, Team 2 Team Drill, on August 25, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the technical support center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

.2 Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on September 15, 2010, and again on September 22, 2010, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the attachment.

These activities constitute completion of two samples as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

40A1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the 2nd quarter 2010 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7000 critical hours performance indicator for the period from the 3rd quarter 2009 through the 2nd quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of July 1, 2009, through June 30, 2010, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one unplanned scrams per 7000 critical hours sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Unplanned Scrams with Complications (IE02)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications performance indicator for the period from the 3rd quarter 2009 through the 2nd quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of July 1, 2009, through June 30, 2010, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one unplanned scrams with complications sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned power changes per 7000 critical hours performance indicator for the period from the 3rd quarter 2009 through the 2nd quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports, and NRC integrated inspection reports for the period of July 1, 2009 through June 30, 2010 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one unplanned transients per 7000 critical hours sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise Performance performance indicator for the period October 2009 through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 5 and 6, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during predesignated control room simulator training sessions, performance during the 2009 biennial exercise, and performance during other drills. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the drill/exercise performance sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period October 2009 through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 5 and 6 were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and revisions of the roster of personnel assigned to key emergency response organization positions. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the emergency response organization drill participation sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.7 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period October 2009 through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 5 and 6 were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and results of periodic alert notification system operability tests. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the alert and notification system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

40A2 Identification and Resolution of Problems (71152)

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

.3 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting:

- August 5, 2010, power range nuclear instrument N41 summing and level card failures, Callaway Action Requests 201007441 and 201007524
- September 2, 2010, emergency diesel generator metering rod sticking, Callaway Action Request 201008153
- September 15, 2010, hardened grease discovered in EFHV0065, Callaway Action Requests 201000039, 201007773 and 201008779

These activities constitute completion of three in-depth problem identification and resolution samples as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

40A3 Event Follow-up (71153)

.1 (Closed) Licensee Event Report 05000483/2009-005-00, Atmospheric Steam Dump Valves Inoperable for Time Greater than Allowed by Technical Specifications

a. Inspection Scope

On December 8, 2009, atmospheric steam dump valve ABPV0003 was taken out of service for calibration of the pressure transmitter and controller. Postmaintenance testing revealed the valve would not stroke full open or control in manual. The positioner diaphragm pressure gauge port was blown out to ensure it was not blocked. After postmaintenance testing, the valve was declared operable on December 11, 2009. The other three atmospheric steam dumps were stroke tested as an extent of condition test. Two of them performed satisfactorily. However, valve ABPV0002 did not stroke full open as required, and was declared inoperable. Troubleshooting for valve ABPV0002 revealed the current-to-pressure transducer was erratic and actuator leakage was in excess of the allowable rate. The current-to-pressure transducer and diaphragm were replaced. Following completion of postmaintenance testing, the valve was declared operable. Subsequent review by the licensee determined that valve ABPV0002 was inoperable for a time longer than permitted by Technical Specification 3.7.4. and was determined to be reportable as a condition prohibited by the plant's technical specifications. Corrective actions include implementing a time based replacement strategy for manual/automatic stations and relocating current-to-pressure transducers to eliminate the vibration failure mechanism. The inspectors reviewed the licensee's

submittal and determined that the report adequately documented the summary of the event including the potential safety consequences and corrective actions required to address the performance deficiency. The inspectors identified that because there was a period where the inoperability for steam generator atmospheric steam dump valve ABPV0002 overlapped that of steam generator atmospheric steam dump valve ABPV0003, the licensee failed to report the event in accordance with 10 CFR 50.73(a)(2)(v), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat or mitigate the consequences of an accident. The enforcement aspects of this violation are discussed below. This licensee event report is closed.

b. Findings

Introduction. The inspectors identified a Severity Level IV noncited violation of 10 CFR 50.73(a)(2)(v), "Licensee Event Report System," for failure to report simultaneous inoperability of two steam generator atmospheric steam dump valves as a condition that could have prevented fulfillment of a safety function.

Discussion. On February 8, 2010, AmerenUE submitted Licensee Event Report 05000483/2009-005-00 to document that steam generator atmospheric steam dump valve ABPV0002 was out of service longer than allowed by Technical Specification 3.7.4, "Atmospheric Steam Dump Valves (ASDs)." The licensee event report also documented a period of inoperability for steam generator atmospheric steam dump valve ABPV0002 that overlapped the inoperability of steam generator atmospheric steam dump valve ABPV0003. The event was determined not to be reportable as a condition that could have prevented fulfillment of a safety function because subsequent engineering analysis credited the diminished flow capacity from the two inoperable valves in addition to the two remaining operable atmospheric steam dump valves.

The inspectors reviewed the licensee's evaluation and determined that the licensee failed to adequately evaluate the reportability of having simultaneous inoperability of two steam generator atmospheric steam dump valves. The Callaway Final Safety Analysis Report Section 15.6.3.2.2.p. states that all three intact steam generator atmospheric steam dump valves are credited in the cooldown for a steam generator tube rupture. In the case of both ABPV0002 and ABPV0003, the valves were found in a condition where they would not have the ability to pass Technical Specification Surveillance Requirement 3.7.4.1. NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," Section 3.2.7 provides guidance that whenever an event or condition exists where the system could have been prevented from fulfilling its safety function because of one or more reasons for equipment inoperability or unavailability it is reportable under 10 CFR 50.73(a)(2)(v). The inspectors noted that failure to meet a surveillance test is a specific example of a potentially reportable condition under 10 CFR 50.73(a)(2)(v).

Based on the guidance in NUREG 1022 and after consultation with the NRC's Office of Nuclear Reactor Regulation, the inspectors determined that Licensee Event Report 05000483/2009-005-00 should have been reported as a condition that could have prevented fulfillment of a safety function. This reporting error was corrected on

September 29, 2010, when the licensee submitted License Event Report 05000483/2009-005-01.

Analysis. The performance deficiency associated with this finding involved the licensee's failure to correctly report a required licensee event report within 60 days after discovery of an event requiring a report to the NRC. This finding affects the Mitigating Systems Cornerstone and is greater than minor because the NRC relies on licensees to identify and report conditions or events meeting the criteria specified in the regulations in order to perform its regulatory function. Because this issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process. Consistent with the guidance in Section IV.A.3 and Supplement I, Paragraph D.4, of the NRC Enforcement Policy, this finding was determined to be a Severity Level IV noncited violation. This finding has no crosscutting aspect as it was strictly associated with a traditional enforcement violation.

Enforcement. Title 10 CFR 50.73(a)(1) requires, in part, that licensees submit licensee event reports for any event of the type described in this paragraph within 60 days after the discovery of the event requiring the report. Title 10 CFR 50.73(a)(2)(v) requires, in part, that the licensee report any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to:

- Shut down the reactor and maintain it in a safe condition
- Remove residual heat
- Control the release of radioactive material
- Mitigate the consequences of an accident

Contrary to the above, on February 8, 2010, AmerenUE failed to correctly document in Licensee Event Report 05000483/2009-005-00 conditions that could have prevented the fulfillment of the safety function of the steam generator atmospheric steam dump valves. This is a Severity Level IV noncited violation consistent with Section 7.10 and Supplement I, Paragraph D.4, of the NRC Enforcement Policy. Because this finding is of very low safety significance and has been entered into the corrective action program as Callaway Action Request 201006086, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000483/2010004-02, "Failure to Accurately Report a Condition that Could Have Prevented Fulfillment of a Safety Function."

.2 (Closed) Licensee Event Report 05000483/2010-002-00, Anticipatory Motor-driven Auxiliary Feedwater Actuation Function Rendered Inoperable in Mode 1

On February 19, 2010, Callaway Plant reviewed industry operating experience and identified that the actuation logic for the start of the motor-driven auxiliary feedwater pumps on a trip of all main feedwater pumps could not be satisfied. Specifically, the actuation logic is defeated when one main feedwater pump is operating and the second main feedwater pump is secured and reset. The automatic start of both motor-driven auxiliary feedwater pumps on a trip of all main feedwater pumps is required to be operable in Modes 1 and 2 as specified by Technical Specification Table 3.3.2-1,

Function 6.g. A review by the licensee discovered eleven times in the past three years that Callaway was in the condition where one main feedwater pump is operating and the second main feedwater pump is secured and reset. The licensee determined that the occurrences constituted a condition prohibited by technical specifications and was a common-cause inoperability of independent trains or channels. The inspectors reviewed the licensee's submittal and determined that the report adequately documented the summary of the event including the potential safety consequences and corrective actions required to address the performance deficiency. The inspectors had previously identified a licensee identified violation of Technical Specification 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation." The enforcement aspects of this violation are discussed in Section 4OA7 of Inspection Report 05000483/2010003. No additional violations were identified during the inspectors' review. This licensee event report is closed.

.3 (Closed) Licensee Event Report 05000483/2010-003-00, Safety System Actuation after Loss of a Switchyard Bus

On February 19, 2010, the train B emergency diesel generator, B centrifugal charging pump, B motor-driven auxiliary feedwater pump, both A and B essential service water pumps and the turbine-driven auxiliary feedwater pumps all were actuated due to a valid shutdown sequencer signal when switchyard maintenance activities combined with a fault on the low side of the A safeguards transformer deenergized the train B 4 kV essential bus NB01. The root cause of the safeguards transformer fault could not be verified but was probably an animal bridging the air gap on the transformer low voltage bushing terminals. The event was determined to be reportable as a valid actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B). The licensee submitted a licensee event report on April 20, 2010. The inspectors reviewed the licensee's submittal and determined that the report adequately documented the summary of the event including the potential safety consequences and corrective actions required to address the switchyard reliability. There were no applicable enforcement aspects of this event. This licensee event report is closed.

.4 (Closed) Licensee Event Report 05000483/2010-004-00, Unanalyzed Single Failure Component for Ultimate Heat Sink/Essential Service Water

On March 2, 2010, the NRC resident inspectors questioned if the design of the essential service water system and associated ultimate heat sink at Callaway conformed to the requirements outlined in 10 CFR Part 50, Appendix A, General Design Criteria 44. Specifically, the inspectors questioned if the ultimate heat sink was designed with suitable redundancy such that the safety function could be accomplished assuming a single failure of either train's cooling tower bypass valve. Following discussions with the inspectors, the licensee determined that the thermal performance analysis, most recently revised in 2007, did not account for a potential single active failure of each train's motor-operated cooling tower bypass valve. A failure to close of either motor-operated valve would result in only two available cooling tower fans and approximately 290 MBTU/hour of additional heat being rejected to the ultimate heat sink pond during the first eight hours of a design basis accident. This additional heat results in the ultimate heat sink

pond exceeding its maximum design temperature of 92.3 degrees Fahrenheit. This resultant temperature could not support operability of the system. A reportability evaluation determined this event to be reportable under 10 CFR 50.73(a)(2)(ii)(B), any event that results in the plant being in an unanalyzed condition that significantly degraded plant safety. The licensee submitted a licensee event report on April 30, 2010. The inspectors reviewed the licensee's submittal and determined that the report adequately documented the summary of the event and performed an adequate determination of cause and extent of condition review. The inspectors noted that the licensee appropriately documented interim corrective actions that consisted of compensatory measures to ensure that the ultimate heat sink pond will not exceed its maximum temperature during a design basis accident. Long term corrective actions would be required to address the nonconforming condition. The inspectors had previously identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The enforcement aspects of the violation are discussed in Section 1R15 of Inspection Report 05000483/2010002. No additional violations were identified during the inspectors' review. This licensee event report is closed.

.5 (Closed) Licensee Event Report 05000483/2010-005-00, Emergency Diesel Generator A Shut Down during 24-Hour Surveillance

On March 30, 2010, the train A emergency diesel generator tripped during a planned 24-hour surveillance run. Troubleshooting by the licensee revealed that a stripped splined shaft caused the diesel engine's governor drive to fail. Disassembly of the failed drive revealed the governor overspeed base to drive assembly gasket did not have the required oil port hole to allow proper lubrication of the drive assembly. The gasket found during disassembly was not an original equipment manufacturer part and had been field cut and installed on October 11, 1999, under Work Request W646151. Because of the time required to repair and retest the failed governor drive assembly, on April 2, 2010, the licensee requested that the NRC exercise discretion to not enforce compliance with the specified completion time for Technical Specification 3.8.1 "AC Sources – Operating," Required Action B.4, which was later granted and allowed the licensee an additional 48 hours to repair the governor drive assembly. The event was determined to be reportable as a condition prohibited by the plant's technical specifications and as a condition that could have prevented fulfillment of a safety function since the period of inoperability overlapped a period of inoperability of the train B emergency diesel generator. The licensee submitted a licensee event report on May 28, 2010. The inspectors reviewed the licensee's submittal and determined that the report adequately documented the summary of the event including the potential safety consequences and corrective actions required to address the performance deficiency. The inspectors had previously identified a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The enforcement aspects of the violation are discussed in Section 4OA3 of Inspection Report 05000483/2010003. No additional violations were identified during the inspectors' review. This licensee event report is closed

.6 (Closed) Licensee Event Report 05000483/2010-006-00, Absence of Vent Valve in Residual Heat Removal Heat Exchanger B Discharge Line Resulted in Incomplete Technical Specification Surveillance

On April 15, 2010, the NRC resident inspectors at the Callaway Plant identified that the train B residual heat removal system discharge Line EJ-024-ECB-10" did not have an accessible high point vent. The line was required by Callaway procedures to be either monitored by venting or tested using an ultrasonic method as described in the procedure's acceptance criteria. Callaway had previously identified the need to install a vent valve in line EJ-024-ECB-10" per modification MP-08-0016 prior to Refueling Outage 17. This vent valve was scheduled to be installed during Refueling Outage 17 but was deferred to the fall 2011 outage. Following discussions with the NRC resident inspectors, the licensee determined that the absence of a vent valve in line EJ-024-ECB-10" resulted in the inability to complete Technical Specification Surveillance Requirement 3.5.2.3. Failure to meet the technical specification surveillance requirement resulted in an event that was reportable as a condition prohibited by technical specifications. The licensee submitted a licensee event report on June 11, 2010. The inspectors reviewed the licensee's submittal and determined that the report adequately documented the summary of the event including the potential safety consequences and corrective actions required to address the performance deficiency. The inspectors had previously identified a noncited violation of Technical Specification 3.5.2, "Emergency Core Cooling System (ECCS)." The enforcement aspects of the violation are discussed in Section 1R04 of Inspection Report 05000483/2010003. No additional violations were identified during the inspectors' review. This licensee event report is closed.

40A5 Other Activities

Temporary Instruction 2515/180, Inspection of Procedures and Processes for Managing Fatigue

a. Inspection Scope

On August 11, 2010, the inspectors performed the requirements of Temporary Instruction 2515/180, "Inspection of Procedures and Processes for Managing Fatigue." This review verified that the Callaway Plant implementation procedures and processes required by 10 CFR Part 26, Subpart I, "Managing Fatigue," would reasonably ensure the requirements of Subpart I were being addressed. The inspectors confirmed that the licensee had procedures in place that described:

- The process to be followed after any individual makes a self-declaration that he or she is not fit to safely and competently perform his or her duties for any part of a working tour as a result of fatigue
- The process for implementing the work hour controls
- The process for conducting fatigue assessments
- Disciplinary actions that may be imposed on an individual following a fatigue assessment, and the conditions and considerations for taking those disciplinary actions

The inspectors reviewed the licensee's training program to verify implementation and testing of specified knowledge and abilities specified in 10 CFR 26.203(c)(1) and -(c)(2). The inspectors confirmed that the licensee's process for developing the annual Fitness for Duty report included provisions for documenting the summary of instances where work hour controls were waived.

The inspectors also confirmed that the licensee had a process in place to retain the following records for at least three years or until the completion of all related legal proceedings, whichever is later:

- Work hours for individuals who are subject to the work hour controls
- Shift schedules and shift cycles of individuals who are subject to the work hour controls
- Waivers and the bases for the waivers
- Work hour reviews
- Fatigue assessments

These activities constitute completion of Temporary Instruction 2515/180, "Inspection of Procedures and Processes for Managing Fatigue."

b. Findings

No findings were identified.

40A6 Meetings

Exit Meeting Summary

On July 7, 2010, the inspectors reviewed the results of the in-office inspection of changes to the licensee's emergency plan and emergency action levels with Mr. K. Bruckerhoff, Assistant Manager, Protective Services, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On September 17, 2010, the inspectors presented the results of the onsite inspection of the licensee's emergency preparedness program to Mr. A. Heflin, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On September 22, 2010, the inspectors presented the resident integrated inspection results to Mr. D. Neterer, Plant Director, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Management Meeting Summary

On October 6, 2010, Mr. G. Miller, Branch Chief, conducted a regulatory performance meeting with Mr. F. Diya, Vice President - Nuclear, to discuss the underlying causes and planned corrective actions for the Mitigating Systems Performance Index – Emergency AC Power performance indicator which crossed the Green-White threshold in 1st quarter 2010 as described in NRC Inspection Report 05000483/2010007.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

S. Banker, Manager, Protective Services
G. Bradley, Manager, Nuclear Operations
K. Bruckerhoff, Assistant Manager, Protective Services
F. Diya, Vice President, Nuclear Operations
J. Dowling, Manager, Equipment Reliability
T. Elwood, Supervising Engineer, Licensing
L. Graessle, Director, Plant Support
A. Heflin, Senior Vice President, Chief Nuclear Officer
M. Hillstrom, Supervising Engineer, Nuclear Oversight
M. Hall, Assistant Manager, Plant Engineering
L. Kanuckel, Manager, Plant Engineering
S. Maglio, Manager, Regulatory Affairs
D. Neterer, Plant Director
S. Petzel, Engineer, Regulatory Affairs
L. Sandbothe, Manager, Plant Support
A. Schnitz, Engineer, Regulatory Affairs
N. Turner, Emergency Response Coordinator
R. Wissel, Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000483/2010004-01	NCV	Failure to Implement Adequate Administrative Controls for Failed Containment Isolation Valve (Section 1R15)
05000483/2010004-02	NCV	Failure to Accurately Report a Condition that Could Have Prevented Fulfillment of a Safety Function (Section 4OA3)

Closed

05000483/2009-005-00	LER	Atmospheric Steam Dump Valves Inoperable for Time Greater than Allowed by Technical Specifications (Section 4OA3)
05000483/2010-002-00	LER	Anticipatory Motor-driven Auxiliary Feedwater Actuation Function Rendered Inoperable in Mode 1 (Section 4OA3)
05000483/2010-003-00	LER	Safety System Actuation after Loss of a Switchyard Bus (Section 4OA3)
05000483/2010-004-00	LER	Unanalyzed Single Failure Component for Ultimate Heat Sink/Essential Service Water (Section 4OA3)

05000483/2010-005-00	LER	Emergency Diesel Generator A Shut Down During 24-Hour Surveillance (Section 4OA3)
05000483/2010-006-00	LER	Absence of Vent Valve in Residual Heat Removal Heat Exchanger B Discharge Line Resulted in Incomplete Technical Specification Surveillance (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
OSP-EN-P001B	Train B Containment Spray Pump Group B Test Performed Under Job 10506075	July 6, 2010
OSP-EN-P001A	Train A Containment Spray Pump Group A Test Performed Under Job 10504770	June 14, 2010
OSP-EN-P001A	Train A Containment Spray Pump Comprehensive Test Performed Under Job 00507615	October 5, 2009

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
M-22AL01(Q)	Piping and Instrumentation Diagram Auxiliary Feedwater System	35

JOBS

10510411/500	10505559/500	10500451/500	09511445/500	07507106/500
10503846/500				

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
IEEE Std. 485-1983	IEEE Recommended Practice for Sizing Large Lead Storage Batteries for Generating Stations and Substations	June 23, 1983

Calculation NK-05	Class 1E Battery Capacity	7
Prompt Operability Determination 200803462	Evaluation of Potential Gas Voiding in the Containment Spray System	May 6, 2008

Section 1R05: Fire Protection

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
FPP-ZZ-00001	Auxiliary Building Prefire Strategies	22
FPP-ZZ-00007	Miscellaneous Buildings Inside Protected Area Prefire Strategies	12

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
M-2X1151	Auxiliary Building Area 5 Penetration Closure Plan EI 1974'-0", EL. 1989'-0", EL. 2000'-0"	0
M-2X1924	Auxiliary Building Penetration Closure Wall Elevation Sheet 24	0
M-2Y1924A	Penetration Closure Schedule Auxiliary Building	1

CALLAWAY ACTION REQUESTS

200204755

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
FSAR 9.5	Fire Hazards Analysis, Appendix 9.53

Section 1R12: Maintenance Effectiveness

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OSP-BG-P005A	Centrifugal Charging Pump A Inservice Test - Group B	39
OSP-BG-P005B	Centrifugal Charging Pump B Inservice Test - Group B	44

CALLAWAY ACTION REQUESTS

201006008	200904938	200906288	201006721	200908382
200908308	200607227	200812909	200900248	200900257
200901062	200901629	200902583	200903713	200904008
200908256	200908308	200908356	201000594	201000687
201002386	201002806	201003284	201003321	201005566
201005782	201006232	201006233	201006304	200904938
200906288				

JOBS

10506473.500	10501005.500	09511912.500	09508793.500	09505575.500
09502295.500	08513891.500	08506158.500	07506519.500	10502217.500

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EDP-ZZ-01129	Callaway Plant Risk Assessment	22

Section 1R15: Operability Evaluations

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
APA-ZZ-00500, Appendix 1	Operability and Functionality Determinations	11
MTM-ZZ-QA006	Limiterque Actuator Electrical Rework and Adjustment	50
OSP-EG-V002A	CCW Train A Containment Isolation Valve Inservice Test	9

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
E-23EG09(Q)	Schematic Diagram Component Cooling Water Containment Isolation Valve	11
E-U3EF02A(Q)	Schematic Diagram Ultimate Heat Sink Cooling Tower Fans	18

E-U3EF02B(Q)	Schematic Diagram Ultimate Heat Sink Cooling Tower Fans Speed Selection	5
E-U3EF02C(Q)	Schematic Diagram Ultimate Heat Sink Cooling Tower Fans Manual Control	17
E-U3EF02D(Q)	Schematic Diagram Ultimate Heat Sink Cooling Tower Fans	8
E-U3EF08(Q)	Schematic Diagram Cooling Tower Trouble Alarm	16

CALLAWAY ACTION REQUESTS

201007644 201007277 201007226 201007678

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	Limitorque Maintenance Update 92-1	
RFR 08746A	Justification for MOVATs Delta-P Database for MOVs	March 4, 1991
RFR 08746D	Revised thrust requirements for various MOVs	January 6, 1992

Section 1R18: Plant Modifications

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
MP 10-0023	BUSBO Diesel Generator Installation to Improve MSPI Margin	0
MP 10-0032	Installation of Non-Safety Auxiliary Feedwater Pump	2
RFR 201003187		

Section 1R19: Postmaintenance Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
APA-ZZ-00322, Appendix C	Job Planning	26

APA-ZZ-00322, Appendix E	Post Maintenance Test Program	1
OSP-EF-V001A	ESW Train A Valve Operability	35
OSP-NE-0001A	Standby Diesel Generator A Periodic Tests	40
MTM-ZZ-QA002	Limatorque SMB-00 MOV Inspection and Overhaul	14

CALLAWAY ACTION REQUESTS

201008779 201008841

JOBS

06523660	07513467/580	08513237	09501475	1000026/910
09504799	10006534/920	10511574/500	10513774/910	10505161
10006534/910				

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
RFR 23186B	Evaluate Using MOV Long Life Grease on All MOVs	September 9, 2004

Section 1R22: Surveillance Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ESP-ZZ-0005	SNM Annual Inventory and Reporting	18
ISL-NF-NB01A	NB01 Degraded and UV to LSELS Channel I	23
ISL-NF-NB01B	NB01 Degraded and UV to LSELS Channel II	24
ISL-NF-NB01C	NB01 Degraded and UV to LSELS Channel III	23
ISL-NF-NB01D	NB01 Degraded and UV to LSELS Channel IV	23
ODP-ZZ-0029	RCS Leakage Action Level Guideline	0
OSP-EJ-P001A	RHR Train A Inservice Test - Group A	48

JOBS

10509762/500	10509763/500	10509764/500	10509765/500	09508572
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09510215 10509612/500

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
Regulatory Guide 1.45	Guidance on Monitoring and Responding to Reactor Coolant System Leakage	1

Section 1EP2: Alert Notification System Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
KSP-ZZ-00008	Tone Alert Radios	4
KSP-ZZ-00110	Siren Alerting System Testing	6
KSP-ZZ-00020	Maintaining Emergency Preparedness	28

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
09500428	Surveillance: Annual Tone Alert Radio Audit	January 14, 2009
09502955	Surveillance: Annual Radio Battery Distribution	March 13, 2009
10512135	Surveillance: Monthly Distribution of Tone Alert Radios	August 6, 2010
255360F	Installation, Operation & Service Manual, Model DCFCTB Battery Operated 2001 Siren Control System with Federal Controller, Two-Way Series B (FCT)	July 2006
	Letter from Ronald L. McCabe, Chief, Radiological Emergency Preparedness Section, US Department of Homeland Security, to Luke H. Graessle, Superintendent, Protective Services, Callaway Plant, approving the Callaway Plant Alert and Notification System Design Report submitted January 3, 2007	February 27, 2007

Section 1EP3: Emergency Response Organization Augmentation Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EP-ZZ-00200	Augmentation of the Emergency Response Organization	13, 14
KOA-ZZ-00200	Activation of the Callaway Plant Emergency Callout System	12, 13
KSP-ZZ-00201	Emergency Augmentation Drill Test	2, 3

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	Minimum Manning Drill Guide, Cycle 2010-04, 10-05	September 8 to October 13, 2010
	Augmentation Test	September 9, 2008
	Augmentation Test	December 15, 2008
	Augmentation Test	March 10, 2009
	Augmentation Test	June 4, 2009
	Augmentation Test	September 22, 2009
	Augmentation Test	December 14, 2009
	Augmentation Test	March 16, 2010
	Augmentation Test	June 29, 2010

Section 1EP4: Emergency Action Level and Emergency Plan Changes

RERP PACKAGES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	RERP Impact Screening Package – EIP-ZZ-00102, Revision 43, Emergency Implementing Actions	December 5, 2009
	RERP Evaluation Package – EIP-ZZ-00260, Revision 20, Event Closeout/Plant Recovery	December 1, 2008
	RERP Impact Screening Package – EIP-ZZ-00102, Revision 42, Emergency Implementing Actions	June 24, 2008
	RERP Impact Screening Package – EIP-ZZ-00201, Addendum A, Revision 10, Control Room Notification Flowchart	May 10, 2010
	RERP Impact Screening Package – EIP-ZZ-SK001, Revision 7, Response to Security Events	March 16, 2010

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
APA-ZZ-00500	Corrective Action Program	51
	A-8	Attachment

APA-ZZ-00500	Corrective Action Program, Appendix 3, Reportability Evaluation	5
APA-ZZ-00500	Corrective Action Program, Appendix 10, Trending Program	3
APA-ZZ-00500	Corrective Action Program, Appendix 17, Screening Process Guidelines	11
APA-ZZ-00100	Written Instructions Use and Adherence	26
EIP-ZZ-A0066	RERP Training Program	19, 20
EIP-ZZ-00260	Event Closeout/Plant Recovery	21
EIP-ZZ-1211T	Accident Dose Assessment	0
EIP-ZZ-A0020	Maintaining Emergency Preparedness	27
SDP-ZZ-00020	Medical Emergency Response Team Operation	5

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
AP08-008	Nuclear Oversight Audit Report: Emergency Preparedness	August 27, 2008
SP08-067	Nuclear Oversight Surveillance Report: Facility Observations of December 10, 2008, ERO Team Drill	December 12, 2008
AP-09-007	Nuclear Oversight Audit Report: Emergency Preparedness	August 20, 2009
AP10-006	Nuclear Oversight Audit Report: Emergency Preparedness	July 29, 2010
SP10-027	Nuclear Oversight Surveillance Report: Facility Observations of August 25, 2010, Hostile Action Based Drill	September 2, 2010
SA09-EP-SO2	Simple Self Assessment: Validate Drill and Exercise Performance, Callaway Action Request 200904562	June 25, 2009
SA09-EP-SO2	Simple Self Assessment: Independent Evaluation of Accident Dose Assessment Software, Callaway Action Request 200813036	June 30, 2009
SA09-EP-SO1	Simple Self Assessment: Emergency Preparedness 2009 Assessment	July 8, 2009
SA10-EP-C01	Benchmark Report: NEI Forum and RUG-4 Meeting	June 23, 2010
SA10-EP-SO1	Simple Self Assessment: Validate Drill and Exercise Performance	August 19, 2010
	After-Action Report: February 19, 2009, Notification of Unusual Event	February 20, 2009
	After-Action Report: April 13, 2010, Notification of Unusual Event	April 27, 2010
	Drill Evaluation Report: Contaminated Victim	December 10, 2008
	Drill Evaluation Report: Contaminated Victim	August 19, 2009

Drill Evaluation Report: Contaminated Victim	August 25, 2010
Drill Evaluation Report: Health Physics Drill	March 24, 2010
Drill Evaluation Report: Health Physics Drill	August 25, 2010
Drill Evaluation Report: Health Physics Drill	August 19, 2009,
Drill Evaluation Report: Radiological Monitoring Drill	August 19, 2009,
Drill Evaluation Report: Health Physics Drill	September 17, 2008,
Drill Evaluation Report:, Health Physics Drill	April 22, 2009
Drill Evaluation Report: Cycle 09-1 Table Top Drills	
Drill Evaluation Report: Cycle 09-3 Rapid Responder Drills	
Drill Evaluation Report: Cycle 09-5 Licensed Operator Continuing Training	
Drill Evaluation Report: April 22, 2009 Team Drill	April 22, 2009
Drill Evaluation Report: Cycle 09-6 Rapid Responder Drills	
Drill Evaluation Report: Ingestion Pathway Pre-Exercise	August 19, 2009,
Callaway Plant Training Manual – Systematic Approach to Training, Attachment 8, Position Job Duty Templates	19
Lesson Plan T68.1054.6, RERP – Rad Chem Support Personnel, Field Team Monitoring	November 9, 2009
Emergency Management Meeting Minutes, 1 st Quarter 2010	March 15, 2010
Emergency Management Meeting Minutes, 1 st Quarter 2009	March 9, 2009
Emergency Management Meeting Minutes, 4 th Quarter 2009	December 7, 2009
EAL Training for EMDs, NEI 99-01	5

CALLAWAY ACTION REQUESTS

200809327	200809404	200812668	200812761	200903776
200905369	200905381	200905404	200905405	200905698
200905946	200905972	200905990	200906115	200906208
200906546	200907902	200908338	201002943	201003873
201006873	201008698	201008699	201008769	201008865
201008874	201008883	201008907	201008908	201008912
201008915				

Section 1EP6: Drill Evaluation

CALLAWAY ACTION REQUESTS

201008271

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
Surveillance Report SP10-027	Nuclear Oversight Observations Associated with the August 25, 2010, Hostile Action Based Drill	September 2, 2010

40A1: Performance Indicator Verification

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
KDP-ZZ-02000	NRC Performance Indicator (PI) Data Collection	14
EIP-ZZ-00101	Classification of Emergencies	46, 47
EIP-ZZ-00102	Emergency Implementing Actions	44
EIP-ZZ-00201	Notifications	47
EIP-ZZ-00201, Addendum A	Control Room Notification Flowchart	10
EIP-ZZ-00201, Addendum C	EOF Notification Package	10
EIP-ZZ-00212	Protective Action Recommendations	23

CALLAWAY ACTION REQUESTS

201001054 201007757

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
	Callaway Plant Mitigating Systems Performance Index (MSPI) Basis Document	1-3
NEI 99-02	Regulatory Assessment Performance Indicator Guideline	5
NEI 99-02	Regulatory Assessment Performance Indicator Guideline	6

Section 40A2: Identification and Resolution of Problems

CALLAWAY ACTION REQUESTS

200811465	200900022	201004384	201005476	201007169
201007441	201007524	201007644	201008153	201008841
201008779				

JOBS

10506063	09501476	08512314	10500127	09511114
09507888	10500699	08505920	09508527	09505328
095001945	08513639	08509151		

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
RFR 23186B	Evaluate Using MOV-Long-Life Grease on all MOVs	September 9, 2004

Section 40A5: Other Activities

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
APA-ZZ-00911	Fatigue Management	0
GDP-ZZ-01810	Nuclear Oversight Assessment Coverage	40
APA-ZZ-00905	Limitations of Callaway Plant Staff Working Hours	11
APA-ZZ-00007	Nuclear Oversight Organization, Responsibility and Conduct of Operations	30

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
	AmerenUE Fatigue Management Training	October 7, 2009
Form CA0161	Waiver of Work Hour Limits	October 7, 2009
Form CA2923	Workplace Fatigue Assessment Tool v2.1	October 22, 2009
SA10-NU-S01	Self Assessment Report, 10CFR Part 26 Fatigue Management	October 11, 2010
POL0044	Fitness for Duty Policy	2