



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV  
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ARLINGTON, TEXAS 76011-4125

October 29, 2008

Adam C. Heflin, Senior Vice  
President and Chief Nuclear Officer  
AmerenUE  
P.O. Box 620  
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000483/2008004

Dear Mr. Heflin:

On September 24, 2008, the U.S. Nuclear Regulatory Commission completed an integrated inspection at your Callaway Plant. The enclosed report documents the inspection results, which were discussed on September 22, 2008, with you and other members of your staff.

The inspection 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.

Based on the results of this inspection, the NRC identified two findings. These findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as noncited violations consistent with Section VI.A of the NRC Enforcement Policy. If you contest these 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 DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission Region IV, 612 East Lamar Drive, Suite 400, Arlington, Texas 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; 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 enclosures will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document

system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Vincent G. Gaddy  
Projects Branch B  
Division of Reactor Projects

Docket: 50-483  
License: NPF-30

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SUNSI Review Completed: \_\_VGG\_ ADAMS:  Yes  No Initials: \_VGG\_

Publicly Available  Non-Publicly Available  Sensitive  Non-Sensitive

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RIV:SRI:DRP/B	C:DRS/OB	C:DRS/PSB1	C:DRS/EB2	C:DRS/EB1
DEDumbacher	RELantz	MPShannon	NFO'Keefe	RLBywater
<b>/RA/E</b>	<b>/RA/</b>	<b>/RA/</b>	<b>/RA/</b>	<b>/RA/</b>
10/23/08	10/14/08	10/14/08	10/12/08	10/10/08
C:DRS/PSB2	C:DRP/B			
GEWerner	VGGaddy			
<b>/RA/</b>	<b>/RA/</b>			
10/15/08	10/28/08			

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 50-483  
License: NPF-30  
Report: 05000483/2008004  
Licensee: Union Electric Company  
Facility: Callaway Plant  
Location: Junction Highway CC and Highway O  
Fulton, MO  
Dates: June 25 through September 24, 2008  
Inspectors: D. Dumbacher, Senior Resident Inspector  
J. Groom, Resident Inspector  
G. Apger, Operations Engineer  
P. Elkmann, Senior Emergency Preparedness Inspector  
Approved By: V. Gaddy, Chief, Project Branch B  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000483/2008004: 6/25/2008 - 9/24/2008; Callaway Plant, Integrated Resident and Regional Report; Operability Evaluations, and Identification and Resolution of Problems

This report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by regional based inspectors. Two Green noncited violations 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." Findings for which the Significance Determination Process does not apply may be Green or 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 and Self-Revealing Findings

#### Cornerstone: Mitigating Systems

- Severity Level IV. The inspectors identified a Severity Level IV noncited violation of 10 CFR 50.73(a)(1) for a failure to submit a required licensee event report within 60 days after discovery of an event requiring a report. On May 21, 2008, Callaway Plant personnel discovered a 6.6 cubic foot void of air within the safety injection system common suction piping. The voided piping, determined to have existed for over a year, was caused by relief valve maintenance on Valve EM8858A that occurred on May 7, 2007. Callaway Plant licensing staff performed a reportability evaluation and determined that the discovery of the void was not required to be reported to the NRC. The inspectors reviewed the licensee's reportability evaluation and associated past operability and determined the event was reportable since a postulated single failure had the potential to disable both emergency core cooling system trains during cold leg recirculation. Since the emergency core cooling system was inoperable from May 7, 2007, until May 21, 2008, the event resulted in an operation or condition which was prohibited by the plant's Technical Specifications as well as an event where a single cause or condition caused two independent trains to become inoperable in a single system.

This finding 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. This finding affected the mitigating systems cornerstone. 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 issue was entered into the licensee's corrective action program as Callaway Action Request 200810199. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to thoroughly evaluate a void discovered in the emergency core cooling system for operability and reportability [P.1(c)] (Section 40A2).

Cornerstone: Barrier Integrity

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to perform a corrosion evaluation of boric acid leakage from containment spray Valve ENHV0006 in accordance with Procedure EDP-ZZ-01004, "Boric Acid Corrosion Control Program." On August 29, 2008, the resident inspectors identified an active packing leak on Valve ENHV0006 with impact to carbon steel components on the valve as evident by discolored, brown boron. The leak, which had been active since February 27, 2007, was caused by a stem imperfection that was previously identified on December 5, 2007. The inspectors noted that Valve ENHV0006 did not have a current boric acid corrosion evaluation despite meeting the screening requirements for an evaluation listed in Procedure EDP-ZZ-01004, "Boric Acid Corrosion Control Program," Section 4.2. Programmatic boric acid control and work control issues were a key contributor to not recognizing the need for an updated boric acid corrosion evaluation.

This finding is more than minor because, if left uncorrected, the failure to analyze the effects of boric acid corrosion on safety-related components could become a more significant safety concern. This finding affected the barrier integrity cornerstone. Using Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," this finding was determined be of very low safety significance because the finding does not represent a degradation of the barrier function of the control room against smoke or toxic atmosphere, does not represent an actual open pathway in the physical integrity of the reactor containment, and does not involve an actual reduction in function of hydrogen ignitors in the reactor containment. This issue was entered into the licensee's corrective action program as Callaway Action Request 200809351. This finding has a crosscutting aspect in the area of human performance associated with the work control component because the licensee failed to interdepartmentally coordinate the impact of changes to the work scope for Valve ENHV0006 such that appropriate personnel could perform the necessary evaluations to assure plant performance [H.3(b)] (Section 1R15).

B. Licensee-Identified Violations

None.

## REPORT DETAILS

### Summary of Plant Status

AmerenUE operated the Callaway Plant at near 100 percent for the entire quarter.

#### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

#### **1R01 Adverse Weather Protection (71111.01)**

##### Readiness to Cope with External Flooding

##### a. Inspection Scope

The inspectors performed a readiness review for the following risk-significant components:

- July 31, 2008, Refueling water storage tank valve compartment
- September 15, 2008, Emergency diesel generators (EDG) and auxiliary feedwater systems following Hurricane Ike

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 (FSAR) 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. The inspectors also reviewed the licensee's procedures for mitigating the flooding to ensure they could be implemented as written. Documents reviewed by the inspectors are listed in the attachment.

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

##### b. Findings

No findings of significance were identified.

#### **1R04 Equipment Alignments (71111.04)**

##### Quarterly Partial System Walkdowns

##### a. Inspection Scope

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

- July 1, 2008, Train A normal service water while the Train B service water supply to essential service water (ESW) was isolated
- July 8, 2008, Control building ventilation (GK system) tie-ins to 1984' elevation affected by Job 080004079 and Modification 08-0021
- August 27, 2008, EDG B
- September 15, 2008, Train A auxiliary feedwater system following testing per Job 08506535

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 discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, FSAR, Technical Specification requirements, outstanding work orders, corrective action documents, 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 walked down accessible portions of the systems to verify components and support equipment were aligned correctly and were 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. Documents reviewed by the inspectors are listed in the attachment.

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

b. Findings

No findings of significance were identified.

**1R05 Fire Protection (71111.05)**

Quarterly Fire Inspector Tours (71111.05Q)

a. Inspection Scope

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

- June 25, 2008, Train B ESW pump room (U-105)
- July 1, 2008, Normal service water and circulating water pump house
- July 13, 2008, Fire Area C-9, Train A engineered safety features switchgear
- July 22, 2008, Fire Area A-1, Auxiliary building 2000' elevation, general area

- August 5, 2008, Fire Area C-1, ESW pipe chase (1974' auxiliary building)
- August 12, 2008, Fire Area D-2, EDG A room
- August 28, 2008, Fire Area A-9, Residual heat removal Train B heat exchanger room

The inspectors reviewed areas to assess if the licensee 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 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 impact equipment which 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.

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

b. Findings

No findings of significance were identified.

**1R07 Heat Sink Performance (71111.07)**

a. Inspection Scope

On July 15, 2008, the inspectors performed the annual inspection required by this inspection procedure by reviewing licensee programs, verifying performance against industry standards, interviewing divers cleaning the ultimate heat sink pond, and reviewing critical operating parameters and maintenance records for the ultimate heat sink pond and cooling fans. The inspectors verified that: (1) performance tests were satisfactorily conducted and reviewed for problems or errors; (2) the licensee properly utilized biofouling controls; (3) the licensee's ultimate heat sink pond inspections adequately assessed the state of cleanliness, and (4) the ultimate heat sink system was correctly categorized under the maintenance rule. Documents reviewed by the inspectors are listed in the attachment.

These activities constitute completion of one heat sink inspection sample as defined by Inspection Procedure 71111.07-05.

b. Findings

No findings of significance were identified.

## 1R11 Licensed Operator Requalification Program (71111.11)

### .1 Quarterly Inspection

#### a. Inspection Scope

On July 3 and July 17, 2008, the inspectors observed licensed operators to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the crew in the following areas: licensed operator performance, crew clarity and formality of communications, ability to take timely actions in the conservative direction, prioritization, interpretation, and verification of annunciator alarms, correct use and implementation of abnormal and emergency procedures, control board manipulations, oversight and direction from supervisors, and ability to identify and implement appropriate Technical Specification actions and emergency plan actions and notifications. The scenarios involved:

- July 3, 2008, Scenario DS-44, "Main Feedwater Line Rupture," and DS-09, "Operating Basis Earthquake with a Station Blackout"
- July 17, 2008, Scenario DS-36, "Loss of Condenser Vacuum and Large Break Loss of Coolant Accident," and DS-16, "Reactor Coolant Pump High Vibration and Loss of Coolant Accident"

The crews' performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed by the inspectors are listed in the attachment.

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

#### b. Findings

No findings of significance were identified.

### .2 Annual Inspection

#### a. Inspection Scope

The inspectors reviewed the annual operating test results for 2008. Since this was the first half of the biennial requalification cycle, the licensee was not required to administer a written examination. These results were assessed to determine if they were consistent with NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, guidance and Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process," thresholds. This review included the test results for a total of 10 crews composed of 53 licensed operators which included: 27 senior operators and 26 reactor operators. All of the crews passed the simulator scenario portion of the operating test. One senior operator and one reactor operator failed the walk-through portion of the operating test. The individual failures were remediated before being returned to shift duties.

These activities constitute one annual licensed-operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

**1R12 Maintenance Effectiveness (71111.12)**

a. Inspection Scope

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

- July 23, 2008, 120 VAC, NN instrument AC power system
- July 24, 2008, 125 VDC, Train A safety related Batteries NK11 and NK13

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of risk-important 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) of the maintenance rule
- Characterizing system reliability issues for performance
- Charging unavailability time
- Trending key parameters for condition monitoring
- Ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or reclassification
- Verifying appropriate performance criteria for structures, systems, and components/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. The inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Documents reviewed by the inspectors 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 of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee'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:

- July 1, 2008, Routine risk management actions associated with MOVATS work on motor-operated Valve EGHV0016
- July 28, 2008, Routine risk management actions associated with maintenance and surveillance testing of the turbine-driven auxiliary feedwater pump
- August 15, 2008, Risk assessment for missed surveillance on Batteries NK11 and NK14
- September 16, 2008, Risk assessment planning and implementation associated with planned Train A EDG and ESW work window

These activities were selected based on their potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly assessed and managed. 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 Technical Specification requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Documents reviewed by the inspectors are listed in the attachment.

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

b. Findings

No findings of significance were identified.

## 1R15 Operability Evaluations (71111.15)

### a. Inspection Scope

The inspectors reviewed the following issues:

- August 7, 2008, ESW NB0115 test switch missing lug, Callaway Action Request (CAR) 200807731
- August 14, 2008, Batteries NK11 and NK14, failure to include momentary loads, CAR 200808609
- August 25, 2008, Train A ESW underground leakage, CAR 200808910
- September 2, 2008, ENHV0006 boric acid leak, CAR 200809115

The inspectors selected 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 FSAR to the licensee'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 reviewed a sample of corrective action documents to verify that the licensee was identifying and correcting deficiencies associated with operability evaluations. Documents reviewed by the inspectors are listed in the attachment.

These activities constitute completion of four operability evaluation inspection samples as defined in Inspection Procedure 71111.15-05.

### b. Findings

Introduction. The inspectors identified a Green noncited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to perform a corrosion evaluation of the boric acid leakage from containment spray Valve ENHV0006 in accordance with Procedure EDP-ZZ-01004, "Boric Acid Corrosion Control Program."

Description. On February 27, 2007, Callaway operations personnel identified a packing leak on Valve ENHV0006, Train A containment spray pump discharge valve. The licensee initiated CAR 200701760 to document the leak. A boric acid corrosion evaluation noted that the leak was an active, wet leak with impact on carbon steel components to the valve as evident by discolored, brown boron. The evaluation determined that the valve yoke and yoke cap screws were the susceptible components to carbon steel wastage but based on the corrosion rates, the leak was acceptable until Refueling Outage 15 (March 2007). Job 07001731, written to adjust Valve ENHV0006 packing, was closed on March 1, 2008, after Callaway maintenance personnel

discovered that the packing could not be adjusted. Callaway personnel then initiated Job 07001860 to address the packing leak. The boric acid corrosion evaluation performed in CAR 200701760 was extended until the new job completion date of December 3, 2007.

On December 5, 2007, Callaway operations personnel initiated CAR 200711463 which documented that Valve ENHV0006 had a significant packing leak requiring weekly cleaning. The CAR noted that Job 07001860 was still open and designated as planning complete but not worked. In response to the operations staff concern, Job 07001860, consisting of replacement of the valve's Belleville washers and a valve packing adjustment, was performed on December 6, 2007. The packing adjustment successfully stopped the active packing leak, however, maintenance technicians noted a valve stem gaul running through the packing that would cause the valve packing to leak again. Job 070010080, initiated to replace the valve stem, was scheduled to be worked during Refueling Outage 17 in March 2010. Despite knowledge that the Valve ENHV0006 packing leak would reappear in the future due to a stem imperfection, the licensee did not update the boric acid corrosion evaluation that expired on December 3, 2007.

On August 29, 2008, the resident inspectors identified an active packing leak on Valve ENHV0006 with impact to carbon steel components on the valve as evident by discolored, brown boron. The leak was caused by the stem imperfection previously identified during Job 07001860 performed on December 5, 2007. The leak, previously stopped by a packing adjustment, had been active since at least June 2008 as evident by a job to clean the packing around Valve ENHV0006. The inspectors also noted that Valve ENHV0006 did not have a current boric acid corrosion evaluation despite meeting the screening requirements for an evaluation listed in Section 4.2 of Procedure EDP-ZZ-01004, "Boric Acid Corrosion Control Program," which required a corrosion evaluation for boric acid leaks that are active or that exhibit signs of carbon steel wastage. Programmatic boric acid control and work control issues were key contributors to not recognizing the need for an updated boric acid corrosion evaluation.

On September 2, 2008, the licensee initiated CAR 200809115 to perform an updated boric acid evaluation for Valve ENHV0006. Following inspector questioning, long-term corrective action to replace the valve stem for Valve ENHV0006 was rescheduled to Refueling Outage 16 in October 2008.

Analysis. The performance deficiency associated with this finding involved the failure to perform a boric acid corrosion evaluation. Specifically, the licensee failed to evaluate the effects of boric acid corrosion on the carbon steel components of Valve ENHV0006. This finding is more than minor because, if left uncorrected, the failure to analyze the effects of boric acid corrosion on safety-related components could become a more significant safety concern. This finding affected the barrier integrity cornerstone. Using Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," this finding was determined to be of very low safety significance because the finding does not represent a degradation of the barrier function of the control room against smoke or toxic atmosphere, does not represent an actual open pathway in the physical integrity of the reactor containment, and does not involve an actual reduction in function of hydrogen ignitors in the reactor containment. This finding had a crosscutting aspect in the area of human performance associated with the work control component because the licensee failed to interdepartmentally coordinate the impact of changes to the work

scope for Valve ENHV0006 such that appropriate personnel could perform the necessary evaluations to assure plant performance [H.3(b)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion V, requires in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances, and shall be accomplished in accordance with these instructions, procedures, or drawings. Licensee Procedure EDP-ZZ-01004, "Boric Acid Corrosion Control Program," Revision 6, Section 4.4, requires a boric acid corrosion evaluation be performed on leaks exceeding the screening criteria specified in Section 4.2. Contrary to the above, on December 5, 2007, the licensee failed to perform an updated corrosion evaluation on Valve ENHV0006 despite the existence of an active boric acid leak. Because of the very low safety significance of this finding and because the issue was entered into the licensee's corrective action program as CAR 200809351, it is being treated as an NCV, consistent with Section VI.A.1 of the Enforcement Policy: NCV 05000483/2008004-01, Failure to Implement Boric Acid Corrosion Control Procedures.

## **1R18 Plant Modifications (71111.18)**

### a. Inspection Scope

The inspectors reviewed the design adequacy of the listed modifications. This included verifying that the modification preparation did not impair the following: (a) in-plant emergency/abnormal operating procedure actions, (b) key safety functions, and (c) operator response to loss of key safety functions.

The inspectors verified that postmodification testing maintained the plant in a safe configuration during testing and that the postmodification testing established operability by: (a) verifying that unintended system interactions did not occur, (b) verifying that performance characteristics, which could have been affected by the modification, met the design bases, (c) validating the appropriateness of modification design assumptions, and (d) demonstrating that the modification test acceptance criteria had been met.

- July 8, 2008, Modification 08-0021, Restructuring of the control building ventilation envelope

Documents reviewed by the inspectors are listed in the attachment.

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

### b. Findings

No findings of significance 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 3, 2008, Job 07006897, Breaker bucket replacement for Valve EFHV0040
- August 15, 2008, Job 08005782, Digital rod position indicator input/output card replacement
- September 5, 2008, Job 07009304, Residual heat removal, Train B, pump following coupling key replacement and turnbuckle adjustment for motor vibration
- September 16, 2008, Job 08505941, ASME Class III weld repair of the Train A essential service water underground supply piping to the control building

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities to verify (as applicable): 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, tests were performed as written in accordance with properly reviewed and approved procedures, equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion), and test documentation was properly evaluated. The inspectors evaluated the activities against Technical Specifications, the FSAR, 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. Documents reviewed by the inspectors are listed in the attachment.

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

### b. Findings

No findings of significance were identified.

## **1R22 Surveillance Testing (71111.22)**

### a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and Technical Specification requirements:

- June 27, 2008, Job 08503557, Routine surveillance on Train A safety injection system slave relay testing
- July 3, 2008, Job 08503897, Routine surveillance for power range nuclear Instrument N42 calibration
- July 9, 2008, Job 08505877, Routine surveillance for EDG Train B
- July 28, 2008, Job 08504701, Inservice test of the turbine-driven auxiliary feedwater pump discharge valves
- July 31, 2008, Job 04501829, Containment isolation Valve HBHV7136 surveillance
- August 5, 2008, Job 07501057, Routine surveillance for condensate storage tank suction header pressure transmitter channel calibrations
- August 7, 2008, Job 08508056, Reactor coolant system leak rate inventory balance
- August 20, 2008, Job 08506250, Inservice test for ESW Pump A and Job 08505249 inservice test for ESW Valve EFHV0023
- September 18, 2008, Job 07503392, Routine surveillance of certificate of conformance calibration procedure for Callaway Plant vibration analysis equipment

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as left setpoints were within required ranges; the calibration frequency was in accordance with Technical Specifications, the FSAR, procedures, and applicable commitments; measuring and test equipment calibration was current; test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied; test frequencies met Technical Specification requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used; test data and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; equipment was returned to a position or status required to support the performance of the safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program. Documents reviewed by the inspectors are listed in the attachment.

These activities constitute completion of five routine, two inservice test, one reactor coolant system leakage, and one containment isolation valve samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings of significance were identified.

**1EP2 Alert Notification System Testing (71114.02)**

a. Inspection Scope

The inspectors discussed with licensee staff the status of 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, Federal Emergency Management Agency (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, dated January 2007. The inspectors also reviewed Procedure KSP-ZZ-00008, "Tone Alert Radios," Revision 4, and reviewed the annual audit of the tone alert radio database, performed November 28, 2007. The inspectors observed a routine silent test of the licensee's alert and notification system.

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

b. Findings

No findings of significance were identified.

**1EP3 Emergency Preparedness Organization Staffing and Augmentation Testing (71114.03)**

a. Inspection Scope

The inspectors discussed with licensee staff the operation of primary and backup systems for augmenting the on-shift emergency response staff to determine the adequacy of licensee methods for staffing their emergency response facilities in accordance with the licensee emergency plan and the requirements of 10 CFR Part 50, Appendix E. The inspectors also reviewed licensee Procedures EIP-ZZ-00200, "Augmentation of the Emergency Response Organization," Revisions 12 and 13, and KSP-ZZ-00201, "Emergency Augmentation Drill/Test," Revision 2, and the references listed in the attachment to this report to determine if the licensee's ability to staff their emergency response facilities were maintained in accordance with these procedures. Documents reviewed by the inspectors are listed in the attachment.

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

b. Findings

No findings of significance were identified.

**1EP5 Correction of Emergency Preparedness Weaknesses (71114.05)**

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program requirements as described in Procedure APA-ZZ-00500, "Corrective Action Program," Revisions 45 and 46. The inspectors reviewed summaries of 322 CARs related to emergency preparedness and emergency response organization performance initiated between June 2006 and August 2008, and selected 32 for detailed review against the program requirements. The inspectors evaluated the licensee's response to the action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with licensee program requirements, 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E. The inspectors also reviewed quality assurance audits, assessments, and drill and exercise evaluation reports as listed in the attachment to this report. Documents reviewed by the inspectors are listed in the attachment.

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

b. Findings

No findings of significance were identified.

**1EP6 Drill Evaluation (71114.06)**

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill (Team Two Turnover Drill) on September 17, 2008, 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 weaknesses 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.

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

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 40A1 Performance Indicator (PI) Verification (71151)

###### .1 Data Submission

###### a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the second Quarter 2008, PIs 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 of significance were identified.

###### .2 Unplanned Scrams per 7000 Critical Hours

###### a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7000 critical hours PI for the period from the 3<sup>rd</sup> Quarter 2007 until 2<sup>nd</sup> Quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC inspection reports for the period of July 2007 to June 2008 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 PI 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 sample of unplanned scrams per 7000 critical hours sample as defined by Inspection Procedure 71151-05.

###### b. Findings

No findings of significance were identified.

###### .3 Scrams with Complications

###### a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications PI for the period from the 3<sup>rd</sup> Quarter 2007 until 2<sup>nd</sup> Quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC

integrated inspection reports for the period of July 2007 to June 2008 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 PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the appendix to this report.

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

b. Findings

No findings of significance were identified.

.4 Drill and Exercise Performance, Emergency Response Organization Participation, and Alert and Notification System Reliability

a. Inspection Scope

The inspectors reviewed licensee evaluations for the three emergency preparedness cornerstone PIs of drill and exercise performance, emergency response organization participation, and alert and notification system reliability for the period July 2007 through June 2008. The definitions and guidance of Nuclear Energy Institute Report 99-02, "Regulatory Assessment Indicator Guideline," Revisions 4 and 5, and the licensee's PI Procedures KDP-ZZ-02000 "NRC Performance Indicator Data Collection," Revisions 9 and 10, and KSP-ZZ-00110, "Siren Alerting System Testing," Revision 5, were used to verify the accuracy of the licensee's evaluations for each PI reported during the assessment period. The inspectors also performed Temporary Instruction 2515/175, "Emergency Response Organization, Drill/Exercise Performance Indicator, Program Review."

The inspectors reviewed a sample of drill and exercise scenarios and licensed operator simulator training sessions, notification forms, and attendance and critique records associated with training sessions, drills, and exercises conducted during the verification period. The inspectors reviewed selected emergency responder qualification, training, and drill participation records. The inspectors reviewed alert and notification system testing procedures, maintenance records, and a 100 percent sample of siren test records. The inspectors also reviewed other documents listed in the attachment to this report.

The inspectors completed three samples during the inspection as defined by Inspection Procedure 71151.

b. Findings

No findings of significance 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 Items Entered into the Corrective Action Program

#### 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 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 attributes reviewed included: the complete and accurate identification of the problem; the timeliness was 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 occurrence reviews were proper and adequate; and the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples.

#### b. Findings

No findings of significance 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. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed, by procedure, as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

#### b. Findings

No findings of significance were identified.

### .3 Selected Issue Follow-up Inspection

#### a. Inspection Scope

The inspectors selected the below listed issues for a more in-depth review. The inspectors considered the following during the review of AmerenUE's actions:

(1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

- Reportability of a 6.6 cubic foot pocket of air in the safety injection system discovered on May 20, 2008
- Operator workaround associated with manual controls of the main feedwater Pump B speed, Job 08005131
- Controls and corrective actions associated with reactor building (containment) access issues

Documents reviewed are listed in the attachment.

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

b. Findings

Introduction. The inspectors identified a Severity Level IV NCV of 10 CFR 50.73(a)(1) for a failure to submit a required licensee event report (LER) within 60 days after discovery of an event requiring a report. The licensee failed to correctly evaluate for reportability the discovery of a 6.6 cubic foot void of air within the safety injection system common suction piping.

Discussion. On May 21, 2008, Callaway Plant personnel discovered a 6.6 cubic foot void of air within the safety injection system common suction piping (Line EM-023-HCB - 6"). The voided piping, determined to have existed for over a year, was caused by relief valve maintenance on Valve EM8858A which occurred on May 7, 2007. The licensee determined that maintenance restoration failed to perform a fill and vent to ensure the suction pipe was full of water. The licensee entered this issue into their corrective action program as a significant condition adverse to quality CAR 200804000. Action 7 of the CAR, directed the Callaway Plant licensing staff to perform a reportability evaluation to determine if an LER was required. The licensee's evaluation determined that the discovery of the void was not required to be reported to the NRC.

The licensee's reportability evaluation examined four scenarios that were possible due to the void discovered in safety injection Line EM-023-HCB - 6". Those scenarios were: the emergency core cooling system (ECCS) injection phase, ECCS recirculation with no single failure, and two scenarios involving single failures during ECCS recirculation. The licensee's evaluation concluded that, during the injection phase and the recirculation phases of an accident with no single failure, the void in Line EM-023-HCB - 6" would remain stationary and consequently, no ECCS components would be adversely affected. However, if a single active failure was assumed, the void discovered in Line EM-023-HCB - 6" would be transported to either the suction of both safety injection pumps or both centrifugal charging pumps. The void discovered was of sufficient

volume such that, one or both pumps would become gas bound and no longer available to inject water into the reactor coolant system.

Since the void discovered in Line EM-023-HCB - 6" was limited to affecting only those scenarios where a single failure was assumed in the recirculation mode, only those scenarios were examined for reportability. The licensee evaluated the effect of having both centrifugal charging pumps or both safety injection pumps unavailable and determined there would be adequate ECCS flow to remove decay heat. The licensee postulated that during the recirculation phase of an accident, the ECCS system is capable of performing its safety function if it has the ability to inject an adequate supply of water into the reactor coolant system to remove decay heat. The licensee concluded the ECCS system was operable even with multiple ECCS subsystems unavailable (both trains of centrifugal charging pumps or both trains of safety injection pumps) since flow analysis indicated the ECCS would still be capable of performing its specified safety function.

The inspectors reviewed the licensee's reportability evaluation and associated past operability and determined the event was reportable since the void resulted in a condition which was prohibited by the plant's Technical Specifications and resulted in a single condition that caused two independent trains to become inoperable. Callaway Plant Technical Specification Bases, Section 3.5.2, describes the ECCS system as consisting of a centrifugal charging subsystem, a safety injection subsystem, and a residual heat removal subsystem and that, during cold leg recirculation operation, the flow path for each train must maintain its design independence to ensure that no single failure can disable both ECCS trains. Since a postulated single failure had the potential to disable both ECCS trains during cold leg recirculation, the inspectors determined the void discovered in Line EM-023-HCB - 6" resulted in a failure to meet Technical Specification LCO 3.5.2 which requires two ECCS trains to be operable in Modes 1, 2, and 3. Since the ECCS system was inoperable from May 7, 2007, until discovery of the void on May 21, 2008, the event resulted in an operation or condition which was prohibited by the plant's Technical Specifications as well as an event where a single cause or condition caused two independent trains to become inoperable in a single system.

The risk associated with this event was determined to be of very low safety significance and is discussed in NRC Inspection Report 05000483/2008003.

Analysis. The performance deficiency associated with this finding involved the licensee's failure to submit a required LER 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 a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to thoroughly evaluate a void discovered in the ECCS system for operability and reportability [P.1(c)].

Enforcement. 10 CFR 50.73(a)(1) requires, in part, that licensees submit an LER for any event of the type described in this paragraph within 60 days after the discovery of the event. 10 CFR 50.73(a)(2)(i)(B) requires, in part, that the licensee report any operation or condition prohibited by the plant's Technical Specification. 10 CFR 50.73(a)(2)(vii)(D) requires, in part, that the licensee report any event where a single cause or condition caused two independent trains to become inoperable in a single system designed to mitigate the consequences of an accident. Contrary to the above, the licensee failed to submit a required LER within 60 days after discovery of an event on May 21, 2008. The event involved a void discovered in the ECCS system that was of sufficient volume to disable both centrifugal charging pumps or both safety injection pumps, a condition prohibited by the plant's Technical Specifications and a common cause failure in a system designed to mitigate accidents. This is a Severity Level IV NCV 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 CAR 200810199, this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000483/2008004-02, Failure to Submit an LER for a Condition Prohibited by the Plant's Technical Specifications.

.4 Annual Emergency Preparedness Sample Review

a. Inspection Scope

The inspectors reviewed summaries of CARs initiated between June 2006 and August 2008 and selected 32 for detailed review. The CARs were reviewed to ensure the full extent of the issues was identified, an appropriate evaluation was performed, and that appropriate corrective actions were specified. The inspectors also reviewed two CARs generated during the inspection to ensure the complete scope of issues was described. The inspectors evaluated the CARs against the requirements of Procedure APA-ZZ-00500, "Corrective Action Program," Revisions 45 and 46.

b. Findings

No findings of significance were identified.

**40A3 Event Follow-up (71153)**

Loss of 13.8 kV Line to the Intake Pumphouse

a. Inspection Scope

The inspectors reviewed the plant's response to a fault and loss of the three phase 13.8 kV electrical feed to the intake pumphouse on September 5, 2008, when a goose caused an arc from one phase to another resulting in the Line PB117 failure. Documents reviewed in this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71153-05.

b. Findings

No findings of significance were identified.

## 40A5 Other Activities

### .1 Quarterly Resident Inspector Observations of Security Personnel and Activities

#### a. Inspection Scope

During the inspection period, the resident inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

#### b. Findings

No findings of significance were identified.

### .2 Temporary Instruction 2515/176, Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

#### a. Inspection Scope

The resident inspectors performed Temporary Instruction 2515/176 to gather information to assess the adequacy of nuclear power plant EDG endurance and margin testing as prescribed in plant-specific Technical Specifications.

The inspection was to ensure that:

- Periodic EDG endurance testing performed by the licensee was consistent with the intent of the Technical Specification Surveillance Requirement for establishing EDG operability
- The loading of the EDGs during testing used worst case frequency and voltages to envelope the predicted design-basis event loading
- The licensee's endurance run procedure required testing the EDG to a power factor value
- Peak design-basis loading values, test durations, and EDG load and power factor ratings were consistent with EDG manufacturer provided specifications

#### b. Findings

No findings of significance were identified.

## **4OA6 Management Meetings**

### Exit Meeting Summary

On August 29, 2008, the emergency preparedness inspector 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 his staff, who acknowledged the findings. The inspector confirmed that proprietary, sensitive, or personal information examined during the inspection had been returned to the identified custodian.

On September 2, 2008, the operations engineer discussed the results of the licensed operator requalification program annual operating test inspection with Mr. L. Wilhelm, Operating Supervisor, Operations Training. The licensee acknowledged the results. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On September 22, 2008, the resident inspectors presented the inspection results 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 understood and acknowledged that any proprietary information reviewed would not be retained following report issuance.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee Personnel

K. Bruckerhoff, Supervisor, Emergency Preparedness  
F. Diya, Vice President, Nuclear  
T. Elwood, Supervising Engineer, Regulatory Affairs/Licensing  
L. Graessle, Manager, Regulatory Affairs  
A. Heflin, Senior Vice President and Chief Nuclear Officer  
T. Herrmann, Vice President, Engineering  
D. Hollabaugh, Superintendent, Protective Services  
S. Maglio, Assistant Manager, Regulatory Affairs  
M. McLachlan, Manager, Engineering Services  
D. Neterer, Manager, Plant Director  
D. Trokey, Regulatory Affairs, Specialist  
L. Wilhelm, Operating Supervisor, Operations Training

### **LIST OF ITEMS OPENED AND CLOSED**

#### Opened and Closed

05000483/2008004-01	NCV	Failure to Implement Boric Acid Corrosion Control Procedures (Section 1R15)
05000483/2008004-02	NCV	Failure to Submit a Licensee Event Report for a Condition Prohibited by the Plant's Technical Specifications (Section 4OA2)

### **LIST OF DOCUMENTS REVIEWED**

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

#### **Section 1R01: Adverse Weather Protection**

##### Callaway Action Request

200507878

##### Drawing

M-25BN02(Q), Hanger Location DWG Borated Refueling Water Storage System Auxiliary Building, Revision 8

## **Section 1RO4: Equipment Alignment**

### Drawings

8600-X-89615, Piping and Instrumentation Diagram Circulating and Service Water Yard Piping and Cooling Tower Piping and Instrumentation, Revision 12

M-22EA01, Piping and Instrumentation Diagram Service Water System, Revision 22

ST-51883, Transamerica Deleval Incorporated – Barksdale Controls Division for Differential Pressure Switches Operation and Adjustment Instructions, dated February 1, 2000

A-6220, Engineering Standards, dated July 15, 1997

### Jobs

06520275

06529835

06528103

## **Section 1RO7: Heat Sink Performance**

### Drawings

C-U101 Ultimate Heat Sink Retention Pond, Revision 6

C-U102 Ultimate Heat Sink Pond Discharge and Outlet Structures, Revision 5

C-UC303 E.S.W.S. Pumphouse Conc. Neat Line & Reinforcing Plan at El 2025'-0" & Sections, Revision14

### Job

PM 045003164, Divers vacuum ultimate heat sink pond

## **Section 1R11: Licensed Operator Requalification Program**

### Callaway Action Request

200808343

### Miscellaneous

NUREG 1021, Operator Licensing Examiner Standards, Revision 9, Supplement 1

**Section 1R12: Maintenance Effectiveness**

Procedure

APA-ZZ-00303, Classification of Systems, Revision 9

Callaway Action Requests

200705263                      200706811                      200800085                      200802252

**Section 1R13: Maintenance Risk Assessment and Emergent Work Controls**

Procedure

EDP-ZZ-1129, Callaway Plant Risk Assessment, Revision 17

Miscellaneous

PRA Evaluation Request 08-320, Revision 0

**Section 1R15: Operability Evaluations**

Callaway Action Requests

200308666	200701760	200701879	200711313
200711463	200711465	200803107	200807731
200808609	200808781	200808777	200809115
200809190	200809210	200809351	

Jobs

07001731                      07001860                      07010080                      08006041

Drawing

E-23NB03(Q), Lower Medium Voltage System Class 1E 4.16KV Three Line Meter and Relay Diagram, Revision 14

Procedures

EDP-ZZ-01004, Boric Acid Corrosion Control Program, Revision 6

MDP-ZZ-LM001, Fluid Leak Management Program, Revision 1

ODP-ZZ-00001, Addendum 15, Performance of Operability and Functionality Determinations, Revision 3

Miscellaneous

Simple Surveillance Report SP08-009

**Section 1R18: Plant Modifications**

Drawing

M-22-GK03, Piping and Instrumentation Diagram for Control Building HVAC

Callaway Action Request

200806676

**Section 1R19: Postmaintenance Testing**

Procedures

MPE-ZZ-QS009, Testing of Molded Case Circuit Breakers, Starters and Ground Fault Relaying, Revision 22

MTE-ZZ-QN005, Electrical Scheme Checkout, Revision 8

APA-ZZ-00661, Administration of Welding, Attachment 5, Non-Destructive Examination Guidelines, Revision 12

Callaway Action Requests

200808687

Jobs

07006654	07006655	07006897	07006905
07006916	08004079	08005941	

**Section 1R22: Surveillance Testing**

Callaway Action Requests

200808476                      200808253

Procedures

HDP-ZZ-06100, Reactor Building Access, Revision 9  
 ISL-AL-00P39, CST to Suction Header Pressure Channel Calibration, Revision 17  
 OSP-AL-V001C, Turbine-Driven Auxiliary Feedwater Valve Inservice Test, Revision 36  
 OSP-EJ-P0018, Residual Heat Removal Train B Inservice Test, Revision 45  
 OSP-HB-V0001, Reactor Coolant Drain Tank Valve Inservice Test, Revision 16  
 OSP-NE-0001B, Standby Diesel Generator B Periodic Tests, Revision 31  
 OSP-SA-0017A, Train A SIS-CSAS Slave Relay Test, Revision 22

Miscellaneous

Certificate of Conformance for Emerson Process Management, Order Number 368620, Revision 1

## **Section 1EP3: Emergency Response Organization Augmentation Testing**

### Procedures

EPIP ZZ-A0001, Emergency Response Organization, Revisions 8 to 11  
EPIP ZZ-00102, Emergency Implementing Actions, Revision 41

### Emergency Response Organization Pager Surveillances

2006 – September 21, October 12  
2007 – February 2, June 14, September 10, December 17  
2008 – March 4, June 16

## **Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies**

### Procedures

EPIP-ZZ-00014, Emergency Response Organization Training Oversight, Revision 0  
EPIP-ZZ-A0020, Maintaining Emergency Preparedness, Revision 25  
EPIP-ZZ-A0066, RERP Training Program, Revision 18

### Quality Assurance Audits

AP06-014, Emergency Preparedness, October 3, 2006  
AP07-009, Emergency Preparedness, August 21, 2007  
AP08-008, Emergency Preparedness, Post-Audit Conference Notes

### Self Assessments

SA07-EP-S01, Emergency Preparedness RERP and Procedure Review, March 12, 2007  
SA07-EP-S02, Validation of ERO Ability to Staff ERFs, April 18, 2007  
SA08-EP-S01, February 11, 2008  
SA08-EP-S02, EP Gap Analysis using the INPO Self Diagnostic Checklist, March 15, 2008

### Drill Evaluation Reports

2006 – August 2, September 13, September 27, October 4, October 11, October 18, October 25

2007 – January 17, January 24, January 31, February 7, February 14, February 21, June 27,  
July 18, July 20, August 8, August 29, September 5, September 12, September 19, September  
26, October 3, December 5, December 12

2008 – January 9, January 16, January 23, January 30, February 6, February 13, February 22,  
April 30, May 5, May 14, May 21, May 28, June 4, June 27

Post-Event Evaluations for Events on April 5 and September 6, 2007

### Callaway Action Requests

200606843	200607349	200607350	200607643
200608379	200608687	200700577	200702530
200703251	200703364	200704245	200705346

200706196	200707250	200707298	200707314
200707355	200707365	200707424	200707766
200708044	200708118	200708241	200708839
200709003	200709161	200709176	200711098
200800199	200800473	200800765	200801692
200801693	200802462	200807405	

Miscellaneous

Job 07500453  
Work Order 06120600

**Section 40A2: Identification and Resolution of Problems**

Callaway Action Requests

198600053	199401033	199500713	200003185
200102691	200503487	200704460	200802019
200804000	200804164	200808590	200809044
200809193	200207472	200500543	

Job

07500453

Generic Communication

Generic Letter 1980-030, Clarification of the Term "Operable" as it Applies to Single Failure Criterion for Safety Systems Required by Technical Specifications, dated April 10, 1980

Procedures

APA-ZZ-00500, Appendix 3, Reportability Evaluation (REPO), Revision 4

EPIP ZZ-00101, Classification of Emergencies, Revisions 42 to 44

EPIP ZZ-00102, Emergency Implementing Actions, Revision 41

EPIP ZZ-00201, Notifications, Revisions 44 to 46

EPIP ZZ-00212, Protective Action Recommendations, Revisions 21 to 23

EPIP ZZ-02001, Drill and Exercise Program, Revision 7

HDP-ZZ-06100, Reactor Building Access, Revision 9

OTA-RK-00022, Addendum 83F, Anticipated Transient Without Scram Panel Trouble Alarm, Revision 1

Miscellaneous

ANSI/ANS-58.9-1981, Single Failure Criteria for Light Water Reactor Safety Related Fluid Systems

Callaway Plant Emergency Plan, Revision 32

EOSL 15493

Instruction Manual for Containment Escape Lock, Chicago Bridge and Iron dated 5/11/1981

Request for Resolution 02814A

**Section 4OA5: Other**

Drawings

8600-X-89888, Piping and Instrumentation Diagram Security Diesel Generator System Security Diesel Generator Building, Revision 17

E-21005(Q), List of Loads Supplied by Emergency Diesel Generator, Revision 32

E-21023(Q), Relay Setting Tabulation and Coordination Curves System NB, Revision 18

E-21023(Q), Relay Setting Tabulation and Coordination Curves System NB, Revision 19

E-21025(Q), Relay Setting Tabulation and Coordination Curves System NE, Revision 11

E-23KJ06(Q), Schematic Diagram Diesel Generator KKJ01A Governor Control, Revision 4

E-23KJ07(Q), Schematic Diagram Diesel Generator KKJ01B Governor Control, Revision 4

E-23NE10(Q), Schematic Diagram 4.16KV DG NE01 Feeder Breaker 152NB0111, Revision 11

E-23NE11(Q), Schematic Diagram 4.16KV DG NE02 Feeder Breaker 152NB0211, Revision 10

E-91669, Large Induction Motors 250 Horsepower and Larger (SNUPPS), Revision 0

Procedures

EOP Addendum 8, Loading Equipment on AC Emergency Busses, Revision 1

OSP-NE-0024A, Standby Diesel Generator A 24 Hour Run and Hot Restart Test, Revisions 10 and 24

OSP-NE-0024B, Standby Diesel Generator B 24 Hour Run and Hot Restart Test, Revisions 18 and 24

Calculations

M-018-0389-01, Analysis of Load Table and Predictions of Voltage Dip and Frequency Excursions at the Various Load Conditions, dated March 14, 1980

ZZ-179, AC Bus Load List, Revision 7

Callaway Action Requests

198600053	199200318	199401033	199500713
199600028	199903304	200000241	200003185

200100501	200100502	200102691	200102691
200207472	200401869	200403443	200500543
200503487	200700499	200704460	200802019
200802872	200804164	200809193	

Jobs

045003971.450	05515945.500	055165569.500	S700265
S724284	S724321.500	S724430.500	

Miscellaneous

January 13, 2006 Letter from Fairbanks Morse Engine to Ameren/Union Electric Co, Subject: 10CFR21 Notification Woodward DRU

January 23, 2006 Letter from Engine Systems Inc. to US. NRC, Subject: 10 CFR Part 21 Reporting of Defects and Non-compliance – Engine Systems, Inc, Report No. 10 CFR 21-0091, Revision 0

Incident Report 86-053