UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

October 16, 2003

Garry L. Randolph, Senior Vice
President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT - NRC INTEGRATED INSPECTION REPORT 05000483/2003005

Dear Mr. Randolph:

On September 20, 2003, the NRC completed an inspection at your Callaway Plant. The enclosed report documents the inspection findings which were discussed on September 22, 2003, with you and other members of your staff.

This 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. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has identified three issues that were evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that violations are associated with these issues. These violations are being treated as noncited violations (NCVs), consistent with Section VI.A of the Enforcement Policy. These NCVs are described in the subject inspection report. Three licensee-identified violations which were determined to be of very low safety significance are listed in Section 4OA7 of this report. If you contest the violations or significance of these NCVs, 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, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Callaway Plant facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response 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). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

David N. Graves, Chief
Project Branch B
Division of Reactor Projects

Docket: 50-483
License: NPF-30

Enclosure:
NRC Inspection Report 05000483/2003005
w/attachment: Supplemental Information

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-483
License:	NPF-30
Report:	05000483/2003005
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	June 22 through September 20, 2003
Inspectors:	M. S. Peck, Senior Resident Inspector J. D. Hanna, Resident Inspector B. D. Baca, Health Physicist M. Haire, Operations Engineer G. W. Johnston, Senior Operations Engineer T. McConnell, Reactor Inspector W. M. McNeill, Reactor Inspector
Approved By:	D. N. Graves, Chief, Project Branch B

CONTENTS

SUMMARY OF FINDINGS

IR 05000483/2003005; 06/22 - 09/20/03; Callaway Plant. Identification and resolution of problems and event followup.

This report covered a 13-week period of inspection by resident inspectors and announced inspections by regional health physics and reactor inspectors. Three findings of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." 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 3, dated July 2000.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This violation was related to inadequate corrective actions taken following an emergency diesel generator rocker arm lube oil valve mispositioning. The licensee's corrective actions were not adequate to prevent recurrence of the event.

  This finding was greater than minor because it could reasonably be viewed as a precursor to a significant event and if left uncorrected, would become a more significant safety concern. This finding was of very low safety significance because the condition was not a design or qualification deficiency, did not represent the actual loss of a safety function of a system, did not represent the actual loss of a safety function of a single train for greater than its Technical Specification allowed outage time, did not represent the loss of a non-Technical Specification related train for greater than 24 hours, or did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating event (Section 4OA2).

  Cornerstone: Barrier Integrity

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This violation was related to inadequate corrective actions taken following identification of an unanalyzed condition (control room ventilation envelope doors open) which resulted in the postulated postaccident control room dose limits to be exceeded. The licensee's corrective actions failed to prevent recurrence of the condition.

  This finding was greater than minor because it was associated with the integrity of the control room envelope. Because this finding involved the degradation of barrier integrity, the finding was evaluated using the significance determination process for at-power situations. The inspectors concluded that the finding was only of very low

safety significance because the finding only represented a degradation of the radiological barrier function provided for the control room (Section 4OA2).

- Green. The inspectors identified a green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, associated with the licensee's failure to assure that applicable regulatory requirements and the design basis for the containment radiation gas monitors were correctly translated into Calculation GT-13 and, ultimately, the radiation monitor setpoint. This deficiency resulted in the containment gaseous channel becoming incapable of performing the design bases function to detect a one gallon per minute reactor coolant system leak within one hour in accordance with the licensee's commitment to Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems."

  This finding was greater than minor because the containment gas channel radiation monitor was not capable of performing the design bases function for an extended period of time. The inoperability of the radiation monitor resulted in potential impact on reactor safety and adversely affected the reactor coolant leakage performance attribute of the barrier integrity reactor safety cornerstone. The finding was only of very low safety significance because other methods of reactor coolant system leak detection were available to the licensee. The unavailability of the gaseous channel leak detection function did not contribute to an increase in core damage sequences when evaluated using the significance determination process Phase 2 worksheets (Section 4OA3).

B. Licensee Identified Violations

Violations of very low significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7.

REPORT DETAILS

Summary of Plant Status:

The Callaway Plant was operating at full power at the beginning of the inspection period. On July 4, 2003, the licensee operated at 93 percent power for main steam valve testing. The licensee operated the plant at full power for the remainder of the inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

Since thunderstorms with the potential for tornados were forecasted in the vicinity of the plant, the inspectors performed a review of the licensee's preparations for inclement weather conditions. On August 18 and 25, 2003, the inspectors walked down portions of the condensate system, the switchyard, the essential service water (ESW) system, and the ultimate heat sink. The inspectors selected these systems because their safety-related functions could be affected by adverse weather. The inspectors compared plant conditions with the criteria found in licensee Procedure EIP-ZZ-00231, "Response to Severe Thunderstorm/High Winds/Tornado Watches and Warnings," Revision 15. The inspectors toured the plant grounds looking for loose debris that could become missiles during a tornado. The inspectors assessed plant operations to verify that systems required for safe control of the plant during adverse weather could be accessed and effectively implemented.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial System Walkdowns. The inspectors performed two partial system walkdowns during the inspection period. On August 5, 2003, the inspectors walked down Train A of the residual heat removal (RHR) system, while the redundant train was out of service for surveillance testing. On August 12 the inspectors walked down Train A of the containment spray system, while the redundant train was out of service for maintenance. In each case, the inspectors checked for correct component alignment and evaluated operability by comparing the selected equipment to the procedures and drawings listed in the attachment and applicable sections of the Final Safety Analysis Report (FSAR).

Complete System Walkdown. The inspectors conducted a detailed review of the alignment and condition of the ESW system. The inspectors completed walkdowns of

system components in the EDG generator building, control room building, emergency cooling tower building, auxiliary building, and the ESW pump house. The inspectors used the licensee procedures and other documents listed below to verify proper system alignment:

- Drawings M-22F01 and M-22F02, ESW system
- Normal Operating Procedure OTN-EF-00001, ESW System, Revision 24
- System Health Report, ESW System, July 31, 2003

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors performed six walkdowns of the accessible portions of the fire areas described below. The inspectors performed the walkdowns to assess the licensee's control of transient combustible materials and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. As part of the inspection, the inspectors reviewed commitments described in the FSAR, Section 9.5.1, "Fire Protection System," and Appendix 9.5B, "Fire Hazard Analysis," to determine requirements for fire protection design features, fire area boundaries, and combustible loading requirements for each fire area. Documents reviewed during the inspection are listed in the attachment.

- Fire Areas A-13, A-14, and A-15, auxiliary feedwater (AFW) pump Rooms 1325, 1326, and 1331, completed on July 3, 2003

- Fire Areas ESW-A and ESW-B, ESW pumphouse, completed on August 11, 2003

- Fire Areas A-14 and A-15, AFW, completed on August 18, 2003

- Fire Areas A-17 and A-18, north and south electrical penetration Rooms 1409 and 1410, completed on July 17, 2003

- Fire Areas A-16B and A-16C, component cooling pump and heat exchanger rooms, completed on July 18, 2003

- Fire Area A-23A, main feedwater Rooms 1 and 2, completed on July 30, 2003

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors completed one flood protection walkdown during the inspection. The walkdown was completed on August 18, 2003, and included the auxiliary building and Area 5 basements. The inspectors conducted the walkdown to verify that the licensee implemented adequate protection from external flooding. The walkdown included the building drain sumps to verify that sump pumps, level alarms, and control circuits were operable. The inspectors also performed in-office reviews of the external flooding calculations listed in the attachment. The inspectors performed this review to verify adequate plant protection during periods of probable maximum precipitation.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalifications (71111.11)

.1 Requalification Activities Review by Resident Staff (71111.11Q)

a. Inspection Scope

The inspectors observed one licensed operator training exercise and the post-scenario critique to assess operator performance. The inspectors placed an emphasis on observing high-risk operator actions, activities associated with the emergency plan, lessons learned items, and plant operational experiences. The inspectors observed licensed operator continued training examination Scenario DS-24, “Loss of Letdown, Anticipated Transient Without Scram with Stuck Open Pzr Safety Valve,” on September 4, 2003.

b. Findings

No findings of significance were identified.

.2 Biennial Licensed Operator Requalification (71111.11B)

a. Inspection Scope

The inspectors: (1) evaluated examination security measures and procedures for compliance with 10 CFR 55.49; (2) evaluated the licensee’s sample plan for the written

examinations for compliance with 10 CFR 55.59 and NUREG-1021, as referenced in the facility requalification program procedures; and (3) evaluated maintenance of license conditions for compliance with 10 CFR 55.53 by review of facility records (medical and administrative), procedures, and tracking systems for licensed operator training, qualification, and watchstanding. In addition, the inspectors reviewed remedial training for examination failures for compliance with facility procedures and responsiveness to address areas failed.

Furthermore, the inspectors: (1) interviewed eight personnel (four operators, two instructors/evaluators, and two training supervisors) regarding the policies and practices for administering examinations; (2) observed the administration of two dynamic simulator scenarios to one requalification crew by facility evaluators, including an operations department manager, who participated in the crew and individual evaluations; and (3) observed three facility evaluators administer five job performance measures, including three in the control room simulator in a dynamic mode and three in the plant under simulated conditions. Each job performance measure was observed being performed by an average of four requalification candidates.

The inspectors also reviewed the results of the annual licensed operator requalification operating examinations for 2003. The inspectors reviewed the licensee's remediation process and procedure to assess the practice of the licensee with regard to remediation of examination failures. The biennial written examinations that were administered in August 2002 were also reviewed. The results of the examinations were assessed to determine the licensee's appraisal of operator performance and the feedback of performance analysis to the requalification training program. The inspectors interviewed members of the training department, training department managers, and four members of operating crews to assess the responsiveness of the licensed operator requalification program. Inspectors also observed the examination security maintenance for the operating tests during the examination week.

Additionally, the inspectors assessed the Callaway plant-referenced simulator for compliance with 10 CFR 55.46 using Baseline Inspection Procedure IP-71111.11 (Section 03.11). The inspectors assessed the adequacy of the facility licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, "Simulation Facilities."

The inspectors reviewed a sample of simulator performance test records (i.e., transient tests, surveillance tests, malfunction tests, and scenario-based-tests), simulator work request records, and processes for ensuring simulator fidelity commensurate with 10 CFR 55.46. The inspectors also interviewed members of the licensee's simulator configuration control group as part of this review.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Maintenance Effectiveness Inspection (71111.12Q)

a. Inspection Scope

The inspectors reviewed two equipment problems and associated Callaway Action Requests (CARs) to verify that the licensee's maintenance efforts met the requirements of 10 CFR 50.65 (Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants) and Administrative Procedure EDP-ZZ-01128, "Maintenance Rule Program," Revision 4. The inspectors focused on maintenance rule scoping, characterization of the failed components, risk significance, determination of an a(1) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors attended applicable expert panel meetings, interviewed responsible engineers, and observed some of the corrective maintenance activities. The inspectors also evaluated emergent equipment issues to determine if problems were identified at the appropriate level and entered into the corrective action program.

- Flux doubling signal received during shutdown Bank B withdraw, documented in CAR 200302704.

- Maintenance Rule (a)(1) evaluation for monitoring of the postaccident monitoring system instrumentation, documented in CAR 200205988. Refer to Section 4OA7 of this report for a description of the licensee identified violation.

b. Findings

No findings of significance were identified.

.2 Biennial Maintenance Rule Implementation (71111.12B)

a. Inspection Scope

Periodic Evaluation Reviews

The inspectors reviewed licensee implementation of the Maintenance Rule. The inspectors verified the determination of the scope of the program, determination of the risk significance, and establishment of performance criteria. When appropriate, the inspectors verified the establishment of appropriate goals, corrective actions, and impact of risk monitoring. The inspectors reviewed the conclusion reached by the licensee with

regard to the balance of reliability and unavailability for specific Maintenance Rule functions. The inspectors reviewed the following performance problems:

- AFW reliability documented in CAR 200200835
- AFW Train A reliability documented in CAR 200201430
- AFW system availability documented in CARs 200201430 and 200302605
- Lower medium voltage system reliability documented in CAR 200202653
- Steam generator blowdown system reliability documented in CAR 200204110
- Control building heating, ventilation, and air conditioning reliability documented in CAR 200204741
- Steam Generator tube condition documented in CAR 200207229
- Component cooling water reliability documented in CAR 200301950

Identification and Resolution of Problems

The inspectors evaluated the use of the corrective action system within the Maintenance Rule program. The inspectors accomplished this by the examination of a sample of corrective action documents listed in the attachment. The inspectors did so to establish that the licensee had entered the corrective action program at the appropriate threshold for the correction of issues identified during programmatic assessments, audits, or surveillances.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed four maintenance risk assessments. The inspectors compared the licensee's risk assessment and risk management activities against the requirements of 10 CFR 50.65(a)(4); the recommendations of Nuclear Management and Resource Council 93-01, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 3; and Engineering Department Procedure EDP-ZZ-01129, "Callaway Plant Risk Assessment," Revision 2. The

inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from degraded equipment. The inspectors evaluated the following risk assessments during the inspection:

- RHR system valve inservice test, Surveillance S707545, performed on July 1, 2003
- Troubleshooting voltage spikes on 480 volt vital switchgear, Work Package W220720, reviewed on July 28, 2003
- RHR operability test, Operations Surveillance S709003, performed on August 5, 2003
- Work Document C685661, replace the control room handswitch to reactor coolant system (RCS) pressurizer power-operated relief Valve (PORV) B. The inspectors reviewed the licensee's risk mitigation and compensatory measures from the control room on September 4 and 5, 2003.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed six operability evaluations to verify that the licensee properly evaluated the operability of plant components and systems. The inspectors compared the technical adequacy of the determinations to the Technical Specifications, the FSAR, and associated design-bases documents.

- CAR 200306041, operability determination of the Emergency Operations Facility due to waste storage, and Letter USEP 03-42, August 18, 2003
- CAR 2003063, operability determination of the main feedwater control and bypass valves, August 27, 2003, and Revision 1 for feedwater regulator Valve B packing adjustment on September 4, 2003
- CAR 200304760, operability determination of design bases flood for Room 3302 (safety related switchgear) following discovery of the absence of door gaps, August 28, 2003
- CAR 200304949, operability determination of the containment cooler condensate recovery system when the ESW system is in service, July 6, 2003

- CAR 200304425, operability determination after foreign material was discovered in the ESW side of the electrical penetration room cooler, August 27, 2003.

- CAR 200305363, operability determination, EDG B inoperable due to empty rocker oil reservoir. The inspectors completed an equipment walkdown on August 31, 2003, and an in-office review on September 4, 2003.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors completed one evaluation of the cumulative effects of operator workarounds during the inspection. The inspectors reviewed the August 2003 operator workarounds list and its effect on the plant emergency operating procedures. The inspectors completed the review to verify that the cumulative effect of workarounds did not challenge the operators' response to plant transients and events. The inspectors also attended the plant operator workaround review meeting conducted on August 12, 2003.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed four postmaintenance retests that could potentially affect risk significant systems or components. The inspectors completed an in-office review to verify that each test adequately demonstrated system operability and capability. The inspectors used Technical Specifications, the FSAR, and ASME Section XI to determine system and component requirements. The inspectors' review included the following postmaintenance retests:

- Retests R696580A and R664088A following repair of the containment spray Pump B motor. The inspectors completed an in-office review on August 22, 2003.

- Retest R688003B startup main feedwater pump. The inspectors observed the test in the turbine building and control room on August 29, 2003.

- Retest R683988A following major preventive maintenance on the safety injection pump motor performed on September 4, 2003.

- Retest R685881A following modification of the Pressurizer PORV block valve actuator (BBHV8000B) on September 4, 2003.

b. Findings

Failure of a Pressurizer PORV Block Valve Due to Improperly Installed Modification

The actuator for pressurizer PORV block Valve BBHV8000B failed on September 4, 2003. The actuator failed after the valve was returned to service following completion of control circuit modifications. The licensee modified the actuator circuit to seal in the closed signal after the handswitch was momentarily placed in the closed position. After the modification was installed, the licensee successfully completed Retest R685881A and declared the block valve operable. About 40 minutes later a control room operator identified that the open indication for the valve's handswitch was not illuminated. The licensee subsequently determined that the block valve actuator motor and thermal overloads had failed.

The valve actuator motor remained energized after the valve reached the full open position during the retest. The motor remained energized because the actuator limit and torque switches were inadvertently bypassed by a jumper during the modification. The modification design called for removal of the jumper. However, the licensee omitted removal of the jumper in the modification work instructions.

Licensee Request for Notice of Enforcement Discretion

On September 6, 2003, the licensee requested the NRC to exercise enforcement discretion for the requirements of Technical Specification Limiting Conditions for Operation (LCO) 3.4.11, "Pressurizer Power Operated Relief Valves (PORVs)." The licensee declared pressurizer PORV block Valve BBHV8000B inoperable at 6:01 a.m. on September 4, 2003, to support modifications to the valve actuator closing circuit. Required Action C.2 required the licensee to restore the block valve to operable status within 72 hours or to begin a plant shutdown such that Mode 3 would be entered within the next 6 hours and Mode 4 within the following 12 hours.

The licensee sought enforcement discretion to permit noncompliance with LCO 3.4.11 for an additional 48 hours. The licensee requested the time extension to permit repair, testing, and restoration of the block valve before a plant shutdown would be required. The NRC approved the licensee’s verbal request for enforcement discretion on September 6. NRC verbal approval was based on the licensee’s clear understanding of the cause of the block valve failure, a defined scope of repair and testing, and that the extended LCO period involved no net increase in radiological risk.

The licensee completed block valve repairs and testing and exited Technical Specification 3.4.11 and the Notice of Enforcement Discretion at 2:18 p.m. on September 7. This issue was considered unresolved pending completion of the NRC's review of the licensee's written discretion request and adequacy of the modification work instructions and retest scope (Unresolved Item (URI) 50-483/0305-01).

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed and/or reviewed seven surveillance tests to verify that the systems tested were capable of performing their safety function and to assess their operational readiness. The inspectors compared the surveillance tests against requirements in plant Technical Specifications, ASME Code Section XI, the FSAR, and licensee procedural requirements:

- Surveillance S707545 and Operations Surveillance Procedure OSP-EJ-V001A, "Train 'A' RHR Valve Inservice Test," Revision 13. The inspectors completed an in-office review on July 1, 2003.

- Surveillance S685369, testing and refurbishment of the Train A hydrogen recombiner feed breaker. The inspectors observed a portion of the performance at the Outage Maintenance Facility on July 2, 2003.

- Surveillance P711342, venting of the motor-driven AFW pump, Train A. The inspectors reviewed the work package in the control room and walked down the AFWwater system to verify proper system restoration on July 31, 2003.

- Surveillances S712124 and S709502, containment spray Pumps A and B inservice tests. The inspectors performed an in-office review of the test results and observed the Train B test on August 19, 2003.

- Surveillance S711887, containment spray Pump B monthly response time test on August 13, 2003.

- Surveillance S712363, emergency diesel slow-start and one-hour run. The inspectors observed portions of the test from the control room and diesel room on August 27, 2003.

- The inspectors observed the performance of the primary watchstation operator routines on August 30, 2003, and the secondary operator routines on August 31.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The licensee did not implement any safety significant temporary modifications during the inspection period.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed one rapid responder proficiency drill and critique (Drill Number 0061203, Cycle 2003-02) from the control room simulator on July 23, 2003. The inspectors evaluated the adequacy of the licensee's drill conduct, proper classification of emergency action levels, and protective action recommendations. The inspectors used Operations Procedure ODP-ZZ-0025, "Emergency Operating Procedure Usage," Revision 5; Emergency Plan Implementing Procedure EIP-ZZ-00101, "Classification of Events," Revision 30; and Emergency Plan Implementing Procedure EIP-ZZ-00201, "Notifications," Revision 37, to evaluate licensee performance. The inspectors also reviewed the licensee's postdrill corrective actions, as documented in CAR 200304977.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

The inspectors reviewed and assessed the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, and high radiation areas. The inspectors interviewed supervisors, radiation workers, and radiation protection personnel involved in high dose rate and high exposure jobs during routine operations. The inspectors discussed changes and trends of the access control program with the radiation protection manager. The inspectors also conducted plant

walkdowns within the radiological controlled area and conducted independent radiation surveys of selected work areas (radwaste and spent fuel building). The following items were reviewed and compared with regulatory and procedural requirements:

- Area postings, radiation work permits, radiological surveys, and other controls for airborne radioactivity areas, radiation areas, and high radiation areas
- High radiation area key control program
- Internal dose assessment for exposures exceeding 50 mrem committed effective dose equivalent (none observed during the inspection period)
- Setting, use, and response of electronic personal dosimeter alarms for work in the radiological controlled area
- ALARA prejob briefings for ALARA Packages 03-2020, “Change out of Liquid Radwaste Filters;” 03-02520, “Removal of Tools from the Spent Fuel Pool;” and 03-10420, “3rd Quarter Containment Entries at Power”
- Conduct of work by radiation protection technicians and radiation workers in areas with the potential for high radiation dose and the associated radiation protection permits, radiological surveys, and controls for the work (ALARA Packages 03-2020, “Change out of Liquid Radwaste Filters,” and 03-02520, “Removal of Tools from the Spent Fuel Pool”)
- Dosimetry placement when work involved a significant dose gradient (Radiation Work Permit W2055444INCORE, “Boron Inspection in the In-Core Tunnel”)
- Controls involved with the storage of highly radioactive items in the spent fuel pool
- Audits, special reports, and self-assessments involving high radiation area controls and staff performance (Surveillance Report SP03-008 and Quality Assurance Audit Report AP-03-002)
- Summary of corrective action documents written since the last inspection and selected documents relating to high radiation area incidents, radiation protection technician and radiation worker errors, and repetitive, significant, individual deficiencies

Performance indicator reviews are documented in Section 4OA1 of this report.

In addition, the inspectors reviewed the licensee’s respiratory protection program for compliance to 10 CFR 20.1703(f).

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below for the period from October 2002 through June 2003. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify the bases in reporting for each data element.

Reactor Safety Cornerstone

- Unplanned Scrams per 7000 Critical Hours
- Scrams With Loss of Normal Heat Removal
- Unplanned Transients per 7000 Critical Hours

The inspectors reviewed a selection of licensee event reports (LERs), portions of operator log entries, daily morning reports, the monthly operating reports, and PI data sheets to determine whether the licensee adequately identified the number of safety system functional failures and the number of unavailable hours for the high pressure injection system that occurred in the previous two quarters. This number was compared to the number reported for the PI during the current quarter. In addition, the inspectors also interviewed licensee personnel associated with PI data collection, evaluation, and distribution.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness PI

Licensee records reviewed included corrective action documentation that identified occurrences of locked high radiation areas (as defined in Technical Specification 5.7), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in NEI 99-02). Additional records reviewed included ALARA records and whole body counts of selected individual exposures. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the PI data. In addition, the inspectors toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled.

Public Radiation Safety Cornerstone

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences

Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that were reported to the NRC or exceeded PI thresholds. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the PI data.

4OA2 Identification and Resolution of Problems (71152)

a. Inspection Scope

The inspectors performed detailed in-office reviews and walkdowns of plant equipment related to five CARs documenting conditions adverse to quality. The inspectors reviewed the reports to verify that the full extent of the issues were identified, that the licensee performed appropriate evaluations, and that corrective actions were specified and prioritized. The inspectors evaluated the reports against the requirements of the licensee's corrective action program, Administrative Procedure APA-ZZ-00500, "Corrective Action Program," Revision 21, and 10 CFR Part 50, Appendix B.

The inspectors reviewed the following items:

- CAR 200306153, centrifugal charging Pump A declared inoperable, August 20, 2003
- CAR 200305363, EDG B inoperable due to empty rocker arm oil reservoir, July 23, 2003
- CAR 200305274, health physics access doors left open, July 17, 2003
- CAR 200306470, health physics access doors left open, August 29, 2003
- CAR 200304760, error in flooding calculation for the 4160 volt essential power distribution room, June 24, 2003

Section 2OS1 evaluated the effectiveness of the licensee's problem identification and resolution processes relating to high radiation area incidents and radiation protection technician and radiation worker errors.

b. Findings

.1 Ineffective Corrective Actions Following an EDG Rocker Arm Lube Oil Valve Misalignment

Introduction. The inspectors identified a Green noncited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This violation was related to inadequate corrective actions taken following mispositioning of an EDG rocker arm lube oil valve. The licensee's corrective actions were not adequate to prevent recurrence.

Description. On August 15, 2003, an equipment operator identified EDG lube oil overflowing a 5-gallon waste can into the floor drain. The lube oil was leaking into the waste can from an open drain valve at the bottom of the EDG A rocker arm oil reservoir. The loss of lube oil rendered the EDG inoperable in that sufficient oil did not remain in the reservoir for the machine to have fulfilled its mission run time of 7 days. The drain valve was inadvertently left open by an equipment operator about 8 hours earlier. The equipment operator had opened the valve in response to a reservoir high level alarm. The operator had mistakenly locked the valve in the full open position.

A similar event occurred on July 16, 2003, on the EDG B rocker arm oil reservoir. During this event, the operator had not fully closed the drain valve. The partially open drain valve resulted in a slow lube oil leak. The licensee identified the leak on July 23. At the time of discovery, the EDG had sufficient lube oil remaining to perform the design bases function of providing on-site power for 7 days. Similar events had also occurred on three previous occasions.

- April 6, 1990, EDG A drain valve was discovered full open (CAR 199000116)
- April 6, 1999 (CAR 199900116) an operator did not fully shut the drain valve
- February 3, 1999, (CAR 199900228), the drain valve was found cracked off a fully closed seat

The licensee's correct actions following the July 16, 2003, event were ineffective and did not prevent recurrence on August 15.

Analysis. The licensee's failure to implement corrective actions to prevent recurrence after the July 16, 2003, valve mispositioning was a performance deficiency. This finding was greater than minor because it could be reasonably viewed as a precursor to a significant event and, if left uncorrected, would become a more significant safety concern. Because this issue involved degradation of a mitigating system, the finding was evaluated using the significance determination process (SDP) for at-power situations. The inspectors concluded that the finding was only of very low safety significance because:

- it was not a design or qualification deficiency
- it did not represent the actual loss of a safety function of a system
- it did not represent the actual loss of a safety function of a single train for greater than its Technical Specification allowed outage time
- it did not represent the loss of a non-Technical Specification related train (designated as risk significant per 10 CFR 50.65 a(4)) for greater than 24 hours
- it did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating event

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," required that measures be established to assure that conditions adverse to quality be promptly identified and corrected. For significant conditions adverse to quality, measures are required to assure that the cause of the condition is determined and corrective action is taken to preclude repetition. Contrary to the above, the licensee's corrective actions failed to preclude recurrence of mispositioning EDG rocker arm lube oil valves that had the potential to render the EDGs inoperable. Because of the very low safety significance and the licensee's action to place the issue in their corrective action program (CAR 200306053), this violation is being treated as an NCV in accordance with Section VI.A.1 of the Enforcement Policy (50-483/0305-02).

.2 Ineffective Corrective Actions Following an Unanalyzed Condition

Introduction. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This violation was related to inadequate corrective actions taken following identification of an unanalyzed condition which resulted in postulated postaccident control room dose limits to be exceeded.

Description. On July 17, 2003, the licensee identified that postaccident control room radiological consequences would exceed the 30 rem regulatory limit for thyroid dose. The licensee determined that air entering the control building from normally open pressure boundary Door 32201 resulted in higher postaccident operator thyroid dose than found in the accident analysis. The licensee's immediate corrective actions included maintaining Door 32201 in the closed position. Predicted postaccident control room dose was restored to within the regulatory limits by maintaining Door 32201 in the closed position.

On August 29, 2003, security personnel identified that Door 32201 was blocked open. The officer asked personnel in the area the appropriate status of the door and immediately closed the door. Security personnel again found Door 32201 blocked open

about 8 hours later. The door was closed again. Security personnel found Door 32201 blocked open a third time about 8 additional hours later. Again the door was closed.

Analysis. The licensee's failure to implement effective corrective actions to ensure plant configuration was consistent with accident analysis assumptions was a performance deficiency. This finding was greater than minor because it was associated with the integrity of the control room envelope. Because this finding involved the degradation of barrier integrity, the finding was evaluated using the SDP for at-power situations. The inspectors concluded that the finding was only of very low safety significance because the finding only represented a degradation of the radiological barrier function provided for the control room.

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," required that measures be established to assure that conditions adverse to quality are promptly identified and corrected. For significant conditions adverse to quality, measures shall assure that the cause of the condition is determined and corrective action is taken to preclude repetition. Contrary to the above, the licensee's corrective actions failed to preclude recurrence of a loss of plant configuration control which resulted in an unanalyzed condition. Because of the very low safety significance and the licensee's action to place the issue in their corrective action program (CAR 200306470), this violation is being treated as an NCV in accordance with Section VI.A.1 of the Enforcement Policy (50-483/0305-03).

4OA3 Event Followup (71153)

1. (Closed) URI 50-483/03-04-01: Failure of containment radiation monitors to meet Technical Specification operability requirements.

a. Inspection Scope

The inspectors reviewed Calculation GT-13, "GTRE31/32 Gaseous Channel Response to a Low Activity Primary Coolant Leak," Revision 0. The licensee performed the calculation to ensure that the containment gaseous channel radiation monitor alarm setpoints were appropriate to meet RCS leak detection requirements. Technical Specification Bases B 3.4.15, "RCS Leakage Detection Instrumentation," required the containment gaseous channel to be capable of detecting a one gallon per minute RCS leak within one hour. The inspectors reviewed the calculations to verify that component functional leak detection requirements and response times were consistent with the licensing basis.

b. Findings

Introduction. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion III, associated with the licensee's failure to assure that applicable regulatory

requirements and the design basis for the containment radiation gas monitors were correctly translated into Calculation GT-13.

Description. Calculation GT-13 modeled radionuclide transport from a postulated RCS leak to the containment gaseous channel radiation monitor. The purpose of the calculation was to demonstrate detector operability by verifying the alarm response resulting from a one gallon per minute RCS leak. Technical Specification Bases B 3.4.15, "RCS Leakage Detection Instrumentation," stated that the monitor was required to detect a one gallon per minute RCS leak within one hour in accordance with Regulatory Guide (RG) 1.45 "Reactor Coolant Pressure Boundary Leakage Detection Systems." Final Safety Analysis Report Table 5.2-6, "Design Comparison with Regulatory Guide 1.45," stated that the licencee complied with RG 1.45 Positions C.1 through C.9. NUREG 0830, "Safety Evaluation Report Related to the Operation of Callaway Plant, Unit 1," stated that the basis of NRC acceptance of the radiation monitor design was the licensee's commitment to RG 1.45.

The licensee used an inappropriately high RCS activity source term in Calculation GT-13. The RCS source term used was equivalent to 0.1 percent failed fuel. This value was greater than 500 times the actual RCS source at any point in the current or previous fuel cycle. RG 1.45 stated that a "realistic" primary coolant radioactivity concentration should be used when demonstrating leak detection capability. RG 1.45, Position C.5, established that the sensitivity and response time of each leakage detection system should be adequate to detect a leakage of one gallon per minute in less than one hour. The inspectors estimated that greater than 500 hours would be needed before the gaseous channel monitor could detect an RCS leak using realistic RCS radionuclide concentrations. Calculation GT-13 failed to demonstrate that the containment gaseous channel was capable of performing its design basis function of detecting a one gallon per minute RCS leak within one hour.

Final Safety Analysis Report Section 5.2.5.2.3, "Containment Gaseous Radioactivity Monitor," stated that gaseous radioactivity is determined from the containment free volume and the gaseous activity concentration of the reactor coolant. Any increase greater than two standard deviations above background would indicate a possible leak. The total gaseous activity level above background increases almost linearly for the first several hours after the beginning of the leak. As specified in FSAR Figure 5.2-2, with 0.1 percent failed fuel, containment background airborne gaseous radioactivity equivalent to 1 percent per day, and a partition factor equal to one, a 1 gpm leak would be detected within 1 hour. Extended reactor operation with a an RCS source term of less than the equivalent of 0.1 percent failed fuel was a change in the facility as described in the FSAR. This change resulted in the containment gaseous monitor no longer being capable of performing its design basis function of detecting a one gallon per minute RCS leak within one hour.

Analysis. This finding was greater than minor because the containment gas channel radiation monitor was not capable of performing the design bases function for an

extended period of time. The inoperability of the containment radiation monitor resulted in potential impact on reactor safety and adversely affected the reactor coolant leakage performance attribute of the Barrier Integrity/Reactor Safety Cornerstone. The finding was only of very low safety significance because other methods of RCS leak detection were available to the licensee. The unavailability of the gaseous channel leak detection function did not contribute to an increase in core damage sequences when evaluated using the SDP Phase 2 worksheets.

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion III, Design Control, required that measures be established to assure that applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. Contrary to the above, applicable regulatory requirements, established in FSAR Table 5.2-6, were not correctly translated into specifications as applied to Calculation GT-13. Specifically, FSAR Table 5.2-6 established that the containment airborne gaseous radioactivity monitors be able to detect a one gallon per minute RCS leak in less than one hour as specified by RG 1.45 Position C.5. Because of the very low safety significance and the licensee's action to place the issue in their corrective action program (CAR 200302806), this violation is being treated as a NCV in accordance with Section VI.A.1 of the Enforcement Policy (50-483/0305-04).

2. (Closed) LER 50-483/02-013-00: Reactor protection system actuation while in Mode 4 while performing testing.

   On November 21, 2002, an unplanned reactor protection system actuation occurred while the reactor was shut down. The actuation occurred after an operator mispositioned a switch in the solid state protection system. The licensee determined that the root cause of the event was an inadequate procedure. The failure to implement an adequate procedure was a violation of 10 CFR Part 50, Appendix B, Criteria V, Instructions, Procedures, and Drawings. The finding was minor because the reactor was shut down with the reactor protection system motor generator sets out of service at the time of the event. The inspectors reviewed the licensees' corrective actions and Surveillance Procedure OSP-SB-00002, "Reactor Trip Breaker 'B' TADOT Shutdown." No additional findings were identified during the inspectors' review. This finding constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee documented the problem in CAR 200207880. This LER is closed.

3. (Closed) LER 50-483/03-005-00: Failure of both containment spray pumps due to gas binding.

   On May 22, 2003, the licensee observed unusual indications during a quarterly surveillance test of the Train B containment spray pump. The pump failed to develop

normal discharge pressure and flow for approximately 5 minutes following pump start. Subsequent review concluded that the pump was gas bound. This deficiency was dispositioned as an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, and a finding of very low safety significance (50-483/0304-02) as documented in Callaway Plant Integrated Inspection Report 05000483/2003004. The inspectors did not identify any additional findings. This LER is closed.

4. (Closed) LER 50-483/02-003-00: AFW valve inoperable due to faulty electronic circuit board.

   On February 7, 2002, the licensee identified that AFW flow control Valve C failed to reduce and control flow at the setpoint. The licensee determined the failure was due to a faulty electronic circuit card in the flow control circuit. The valve was inoperable for a total of 260 days. The inoperable duration was a violation of Technical Specifications because the permitted out-of-service time was exceeded. The finding was minor because the valve would have performed the required safety function. The licensee corrected the problem by replacing the failed circuitry card and modifying the testing sequence for the flow control valves. No additional findings were identified during the inspection. This finding constituted a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee documented the problem in CAR 200200835. This LER is closed.

5. (Closed) LER 50-483/02-002-00: Motor-driven AFW Pump A inoperable due to AFW calculation error.

   On February 6, 2002, the licensee identified that an error had reduced the margin between the actual AFW pump flow and the design basis flow acceptance criteria. The licensee identified the condition during a review of the AFW design basis calculation. The licensee determined that motor-driven AFW Pump A did not meet the revised acceptance criteria on five occasions during the past 3 years. The cause of the error was an incorrect assumed postaccident maximum steam generator pressure. The AFW train was inoperable for a total of 370 days. The inoperable duration was a violation of Technical Specifications because the permitted out-of-service time was exceeded. The finding was minor because the AFW train would have performed the required safety function. The licensee's corrective actions included a review of other applicable design calculations, revised throttle valve positions, and rotating element replacement. No additional findings were identified during the inspection. This finding constituted a violation of minor significance that was not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The corrective action aspects of this violation were dispositioned in NRC Inspection Report 05000483/200208. The licensee documented the problem in CAR 200200281. This LER is closed.

4OA6 Management Meetings

On September 22, 2003, the resident inspectors presented their inspection results to Mr. G. Randolph, Senior Vice President-Generation and Chief Nuclear Officer, and other members of his staff who acknowledged the findings.

On September 22, 2003, the Acting Chief, Plant Support Branch, Division of Reactor Safety, presented the results of the supplemental emergency preparedness inspection conducted September 8-10, 2003, and conducted a Regulatory Performance Meeting during a telephonic conference with Mr. G. Randolph, Senior Vice President-Generation and Chief Nuclear Officer, and other members of his staff, in accordance with the requirements of Manual Chapter 0305. Mr. Randolph acknowledged the observations presented.

On September 12, 2003, the inspectors presented the licensed operator requalification inspection results to Mr. R. Affolter, Vice President Nuclear, and other members of his staff who acknowledged the findings.

On August 22, 2003, the inspectors presented the maintenance effectiveness inspection results to Mr. R. Affolter, Vice President-Nuclear, and other members of the staff who acknowledged the findings presented. The inspectors asked the licensee, if the inspectors examined any proprietary information during the inspection. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

On August 8, 2003, the inspector presented the inspection results of access control to radiologically significant areas to Mr. R. Affolter, Vice President, Nuclear, and other members of his staff who acknowledged the findings.

4OA7 Licensee-Identified Violations

The following findings of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

- Technical Specification 5.4.1.a requires written procedures applicable to Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Appendix A, Section 7, references procedures for access control to radiation areas. Section 2.3.1 of Procedure UEND-RADIOLOGICAL-01, “Conduct of Work in the Radiological Controlled Area (RCA),” Revision 2, states, in part, workers will follow all radiation work permit instructions and posting instructions in the radiologically controlled area. On April 28, 2003, a worker entered a “Contact Health Physics for Survey/Caution High Radiation Area/Contamination Area” prior to contacting health physics for an entry survey. This issue is described in the licensee’s corrective action program as CAR 20033298. Using the

Occupational Radiation Safety SDP, the inspectors determined that the finding is of very low safety significance and is being treated as an NCV because the finding was not an ALARA issue, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised.

- Technical Specification 5.7.1.a states, in part, that each entry to a high radiation area shall be barricaded and conspicuously posted as a high radiation area. On April 15, 2003, a worker and radiation protection technician entered and exited an opening in the floor grating of the reactor water hold-up tank Room B that was a high radiation area. The access point was left unbarricaded and unposted for 2 days until the work activity resumed. This event is described in the licensee's corrective action program as CAR 20033139. Using the Occupational Radiation Safety SDP, the inspectors determined that the finding is of very low safety significance and is being treated as a NCV because the finding was not an ALARA issue, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised.

- Title 10 of the Code of Federal Regulations, Section 50.65 a(1), required the licensee to monitor the performance or condition of structures, systems, or components, against licensee established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, or components are capable of performing their intended functions. On September 27, 2002, the licensee identified that portions of the postaccident monitoring system had not been properly scoped under the Maintenance Rule. Analysis of the equipment out-of-service log entries revealed that multiple failures of the ex-core neutron monitoring system had occurred during the past 3 years. Consequently, the licensee's failure to scope the postaccident monitoring system resulted in that system not being evaluated as a 10 CFR 50.65 a(1) system. This event is documented in the licensee's corrective action program as CAR 200205988.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Affolter, Vice President - Nuclear
T. Antweiler, Maintenance Rule Coordinator
R. G. Barton, Shift Supervisor Operations Training
D. Bettenhausen, Supervising Engineer
S. Bond, Superintendent, System Engineering
Dr. W. P. Cravens, MRO
A. H. Daume, Shift Supervisor
P. J. Davis, Supervisor FFD
R. Farnam, Superintendent, Health Physics
K. Gilliam, Acting Supervisor, Health Physics Operations
J. M. Gloe, Manager Operations Support
S. M. Halverson, General Supervisor Simulator Support
E. W. Henson, Supervisor Regulatory Affairs
T. Herman, Supervising Engineer
T. Hermann, Superintendent, Nuclear Engineering
J. Hiller, Engineer, Regional Regulatory Affairs
M. Hillstrom, Quality Assurance Engineer
D. L. Hopkins, Operating Supervisor
R. Lamb, General Superintendent, Work Control
M. McLachlan, Supervising Engineer
R. A. Nelson, Shift Supervisor
D. W. Neterer, Operations Superintendent
W. D. Nowell, Operating Supervisor
J. Nurrenbern, Maintenance Rule Coordinator
S. Petzel, Regulatory Affairs Engineer
S. M. Putthoff, Operating Supervisor
M. Reidmeyer, Supervisor, Regional Regulatory Affairs
D. Rickard, Performance Coordinator
R. R. Roselius, Training Superintendent
T. Schroer, Administrative Supervisor
D. Stepanovic, Superintendent, Technical Support
N. D. Turner, Operating Supervisor
W. Witt, Plant Manager

LIST OF ITEMS OPENED AND CLOSED

Opened

50-483/03-05-01	URI	Failure of a pressurizer PORV block valve due to improperly installed modification (Section 1R19)

50-483/03-05-02	NCV	Ineffective corrective actions following an EDG rocker arm lube oil valve mispositioning (Section 4OA2)
50-483/03-05-03	NCV	Ineffective corrective actions following an unanalyzed condition (Section 4OA2)
50-483/03-05-04	NCV	Failure of containment radiation monitors to meet Technical Specification operability requirements (Section 4OA3).

Closed

50-483/03-05-02	NCV	Ineffective corrective actions following an EDG rocker arm lube oil valve mispositioning (Section 4OA2)
50-483/03-05-03	NCV	Ineffective corrective actions following an unanalyzed condition (Section 4OA2)
50-483/03-05-04	NCV	Failure of containment radiation monitors to meet Technical Specification operability requirements (Section 4OA3).
50-483/03-04-01	URI	Failure of containment radiation monitors to meet Technical Specification operability requirements (Section 4OA3).
50-483/02-013-00	LER	Reactor protection system actuation while in Mode 4 while performing testing (Section 4OA3).
50-483/03-005-00	LER	Failure of both containment spray pumps due to gas binding (Section 4OA3).
50-483/02-003-00	LER	AFW valve inoperable due to faulty electronic circuit board (Section 4OA3).
50-483/02-002-00	LER	Motor-driven AFW Pump A inoperable due to AFW calculation error (Section 4OA3).

LIST OF DOCUMENTS REVIEWED

Callaway Action Requests

199700170	200107104	200200875	200204110	200207240
199903023	200107423	200200881	200204741	200207306
200100865	200107925	200201430	200206783	200207309
200101562	200200180	200201725	200206785	200207331
200101766	200200281	200202653	200206820	200207400
200101800	200200304	200202792	200206963	200207475
200103349	200200316	200202908	200207059	200207674
200103722	200200669	200203082	200207205	200207770
200105218	200200835	200203581	200207229	200207772

200207854	200302605	200303918	200306229
200207880	200302656	200304272	200306230
200208352	200302695	200304364	200306287
200208376	200302861	200304684	
200208437	200302962	200304760	
200300081	200303073	200305560	
200300780	200303201	200305635	
200301950	200303263	200306225	
200302598	200300368	200306228	

Procedures

APA-ZZ-0030, Classification of Systems, Revision 6

APA-ZZ-00500, Corrective Action Program, Revision 34

APA-ZZ-01000, Callaway Plant Health Physics Program, Revision 17

EDP-ZZ-01128, Maintenance Rule Program, Revision 4

FPP-ZZ-00001, Auxiliary Building Prefire Strategies (for fire areas A-16B, A-16C, A-17, A-18, and A-23A), Revision 13

HDP-ZZ-03000, Radiological Survey Program, Revision 21

HTP-ZZ-01203, RWP Access Control, Revision 28

HTP-ZZ-06009, Personnel Contamination Incidents, Revision 27

HTP-ZZ-06028, Radiological Controls for Pools that Contain or Store Spent Fuel, Revision 3

HTP-ZZ-08002, Respiratory Protection Issue and Use, Revision 21

ITL-EF-OT99A, Loop Temp, ESW Pump A Lower Thrust Bearing Temperature, Revision 5

ODP-ZZ-0003, Shift Relief and Turnover, Revision 19

MSE-ZZ-Q002, 480 Volt Circuit Breaker Preventative Maintenance and Inspection, Revision 16

ODP-ZZ-0016E, Appendix 3E, Equipment Operator Watchstation Practices and Rounds, Revision 6

OSP-EF-00001, ESW Valve Lineup Verification, Revision 5

OSP-EF-0003A/B, UHS Cooling Tower Fan Run, Revision 3

OSP-EF-00004, UHS Inspection, Revision 1

OSP-EF-V0001A/B, ESW Mode 1 Operability, Revision 24

OSP-EM-P001B, Safety Injection Pump B Operability, Revision 26

OSP-EN-P001A, Containment Spray Pump A Inservice Test, Revision 23,

OSP-NE-0001A, Diesel Slow Start and One Hour Run, Revision 12

OTA-RL-RK119, Annunciator Response Procedure for Windows 119A through 119F, Revision 1

OTN-AE-0001, Normal Operating Procedure, Feedwater, Revision 28

OTN-BM-0001, Normal Operating Procedure, Steam Generator Blowdown, Revision 14

OTN-EJ-0001, Normal Operating Procedure, Residual Heat Removal System, Revision 17

OTN-EJ-0002, Normal Operating Procedure, Fill and Vent RHR System, Revision 2

OTO-AC-00002, Turbine Vibration, Revision 6

OTS-EM-0001B, Safety Injection Pump B Non Surveillance Run, Revision 2

O-WORKAROUND-01, Nuclear Division Policy for Workarounds, Revision 0

RRA-ZZ-00001, NRC Performance Indicator Program, Revision 0

SDP-ZZ-SF022, Reporting of Safeguards Events, Revision 10

TDP-IS-00001, Simulator Operation and Maintenance, Revision 3

TDP-IS-00002, Simulator Configuration Management, Revision 4

TDP-IS-00010, Operational Evaluations, 2/22/2001

TDP-ZZ-00019, NRC License Examination Security and Integrity, Revision 5

TDP-ZZ-00021, Job Performance Measures, Revision 2

TDP-ZZ-00022, Licensed Operator Continuing Training, Revision 15

Drawings

M-22EJ01, Piping and Instrumentation Diagram, Residual Heat Removal System

M-22EN01, Piping and Instrumentation Diagram, Containment Spray System

Requests for Resolution

22036, Replace Control Building Heating, Ventilation, and Air Conditioning CO/CO_2 Monitors, Revision A

7809, Room Cooler Operability Envelope, Revision E

06183, Diesel Generator Operability Regarding Prelube Pump Surveillance, Revision A

22895, Remove White Light Switch from Magne-Blast Close Circuit, Revision A

Calculations

EF-45, Four Containment Coolers with New Coils, Revision 5

EG-20, Max CCW Temperature During Post - LOCA, Revision 0

EJ-022, Calculate Heat Transfer from RHR Pump Casing with Insulation Removed, Revision 0

EJ-022, Calculate Heat Transfer from RHR Pump Casing and Suction Pipe with Insulation Removed, Revision 01

GL-390, Auxiliary Building HVAC, Revision 0 and Addenda 2 through 5

GN-03, Determine the Minimum ESW Flow Rate to GN Coolers with New Coils, Revision 5

M-EF-52, Heat Exchanger Performance Based on Reduced ESW Temperature and Flow, Revision 1

SPA-18, Probable Maximum Precipitation Analysis of the Power Block, Revision 4

SPA-18, ADD 5, Probable Maximum Precipitation Analysis Update for Security Modifications, Revision 0

SPA-18, ADD 4, Operability Evaluation for Plant Drainage Pathways, Revision 0

SPA-18, ADD 3, Probable Maximum Precipitation Analysis for Unit 2 Backfill, Revision 0

Records

August 2003 Callaway Plant Simulator Performance Indicators
Simulator Differences and Issues LOCT Cycle 03-04, 8/29/2003

Examination Material

Scenario DS-13, Revision 8/16/2003
Scenario DS-35, Revision 8/16/2003
Scenario DS-08, Revision 8/16/2003
Scenario DS-24, Revision 8/16/2003

JPM URO-AEO01C52J, 3/8/2003
JPM SRO-RER02C58J, 2/25/2003
JPM URO-AEO02015J, 5/12/2003
JPM URO-AEO05046J, 2/25/2003
JPM URO-SAE0C07J, 8/19/2003
JPM URO-SNE02C109J, 8/19/2003

Self-Assessment Corrective Actions

SA02-TR-002, Annual Operations Training Programs Self Assessment, 6/11/2002
SA03-TR-001, Focused Self Assessment, 5/22/2003
SA-TR-002, Annual Operations Training Programs Self Assessment, 7/8/2003

Miscellaneous

AUCA 03-024, Event Review Team Meeting Summary, dated July 24, 2003

AUCA 03-026, Event Review Team Meeting Summary, dated August 18, 2003

Final Safety Analysis Report, Section 8.1.4.2, Onsite Power System

Maintenance Rule Periodic Assessment for Cycle 12

Night Order regarding 4160 Volt Magne-Blast Breakers, issued August 22, 2003

Plot of Turbine Vibration at Number 6 & 7 Bearings from August 18-19, 2003

Secondary watchstation logs from July 15-24, 2003

System Health Report for AFW

System Health Report for Component Cooling Water

System Health Report for Control Building Heating, Ventilation, and Air Conditioning

System Health Report for Diesel Generator

System Health Report for Diesel Building Heating, Ventilation, and Air Conditioning

System Health Report for Essential Service Water

System Health Report for Low and Medium Voltage

System Health Report for Steam Generator Blowdown

Technical Specification 3.8.3 and associated Technical Specification Bases for Diesel Fuel Oil, Lube Oil, and Starting Air

LIST OF ACRONYMS

AFW	auxiliary feedwater
ALARA	as low as reasonably achievable
CAR	Callaway Action Request
CFR	*Code of Federal Regulations*
ESW	essential service water
FSAR	Final Safety Analysis Report
EDG	emergency diesel generator
LCO	limiting condition for operation
LER	licensee event report
NCV	noncited violation
NRC	U.S. Nuclear Regulatory Commission
PI	performance indicator
PORV	power-operated relief valve
RCA	radiologically controlled area
RCS	reactor coolant system
RG	Regulatory Guide
RHR	residual heat removal
SDP	significance determination process
URI	unresolved item