UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

July 24, 2002

EA-01-130

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

SUBJECT: CALLAWAY - NRC INSPECTION REPORT 50-483/02-02

Dear Mr. Randolph:

On July 6, 2002, the NRC completed an inspection at your Callaway Plant. The enclosed report documents the inspection findings which were discussed with Mr. R. Affolter and other members of your staff on July 9, 2002.

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 two of 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. If you contest the violation 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.

The NRC has increased security requirements at Callaway Plant in response to terrorist acts on September 11, 2001. Although the NRC is not aware of any specific threat against nuclear facilities, the NRC issued an Order and several threat advisories to commercial power reactors to strengthen licensees' capabilities and readiness to respond to a potential attack. The NRC continues to monitor overall security controls and will issue temporary instructions in the near future to verify by inspection the licensee's compliance with the Order and current security regulations.

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

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NRC Inspection Report
50-483/02-02

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-483
License:	NPF-30
Report:	50-483/02-02
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	April 7 through July 6, 2002
Inspectors:	V. G. Gaddy, Senior Resident Inspector J. D. Hanna, Resident Inspector T. F. Stetka, Senior Operations Engineer R. A. Kopriva, Senior Project Engineer
Approved By:	D. N. Graves, Chief, Project Branch B
ATTACHMENT:	SUPPLEMENTAL INFORMATION

SUMMARY OF FINDINGS

Callaway Plant
NRC Inspection Report 50-483/02-02

IR 05000483-02-02; on 04/07-07/06/2002; Union Electric Co; Callaway Plant. Integrated Resident & Regional Report; Fire Protection, Personnel Performance During Nonroutine Evolutions and Events, and Problem Identification and Resolution.

The inspection was conducted by resident and regional inspectors. The inspection identified three Green findings, two of which were characterized as noncited violations. 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 are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

Cornerstone: Mitigating Systems

- Green. A noncited violation of Operating License Condition 2.C(5)(c) occurred when the licensee failed to take compensatory action when the 3-hour rated fire doors that separated the two trains of control room air conditioning were unlatched and not closed.

  This finding is more than minor because it had a credible impact on safety in that, if a fire had occurred while the doors were unlatched and not closed, they could not perform their function of preventing a fire from spreading from one fire area to another fire area. This finding affects the mitigating system cornerstone. This finding was evaluated using Appendix F of the reactor safety significance determination process and determined to be of very low safety significance because the combustible load for the area was low and because the fire detectors on each side of the doors were operable. This finding is in the licensee's corrective action system as Callaway Action Request System Number 200204041 (Section 1R05.3).

- Green. A leather weld rod pouch lodged inside the fill valve to the condensate storage tank could have adversely affected the auxiliary feedwater system if the pouch became dislodged while filling the tank.

  This finding is more than minor; it had a credible impact on safety because the lack of foreign material exclusion controls could have resulted in the leather weld rod pouch entering the condensate storage tank and adversely affecting the auxiliary feedwater system. This finding affects the mitigating system cornerstone. This finding was found to be only of very low safety significance using the reactor safety significance determination process because no loss of a safety function occurred and only one of three auxiliary feedwater pumps would have been affected. This finding was entered into the licensee's corrective action program as Callaway Action Request System Number 200202678 (Section 1R14.1).

- Green. A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, occurred because the corrective action taken by the licensee regarding the emergency diesel

Generator B overspeed trip switch was inadequate. On June 21, 2001, the screws that held the overspeed trip switch intact were found to be loose. The emergency diesel generator had to be removed from service for repair. Repair consisted of tightening the screws that held the switch in place. No other repair action was taken nor was a root cause analysis conducted. On April 9, 2002, the same screws on the same switch were loose and found to be damaged. This also required the emergency diesel generator to be removed from service for repair. Procedure APA-ZZ-00500, "Corrective Action Program," Revision 31, required that a thorough root cause analysis be performed for this level deficiency. The corrective actions taken in response to the first failure, including the failure to perform a root cause analysis, were not adequate to prevent the second failure.

This problem identification and resolution finding was more than minor because failure of the overspeed trip switch could have made the diesel generator inoperable. This finding affected the mitigating system cornerstone. The finding was found to be of very low safety significance using the significance determination process because the emergency diesel generator was not determined to be inoperable and the other emergency diesel generator was available. Because this finding was of very low safety significance, and the finding was entered into the licensee's corrective action program as Callaway Action Request System Numbers 200103939 and 200202342, it is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy (Section 40A2.1).

Report Details

Summary of Plant Status: The plant operated at full power until May 3, 2002, when power was reduced to approximately 60 percent to remove main feed Pump B from service for maintenance. Main feed Pump B was experiencing an increase in the operating temperature of the active side thrust bearing pads. The pump was repaired on May 4, returned to full power on May 6, and operated 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

During June 2002 the inspectors reviewed the licensee's adverse weather preparations to verify that design features and implementation to address severe thunderstorms/tornados were adequate. The inspectors walked down various systems, including electrical distribution, to verify that design features and implementation of the licensee's procedures protected mitigating systems when challenged. The inspectors reviewed Emergency Plan Implementing Procedure EIP-ZZ-00231, "Response to Severe Thunderstorm/High Winds/Tornado Watches and Warnings," Revision 12, for these systems and discussed adverse weather preparations with the licensee.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

On April 9, 2002, the inspectors performed a partial walkdown of emergency diesel generator Train A while Train B was out of service for maintenance. The inspectors compared the as-found condition of the emergency diesel generator with the requirements of the Final Safety Analysis Report; Technical Specifications; Drawing M-22KJ01(Q), "Piping and Instrumentation Diagram Standby Diesel Generator Cooling Water System," Revision 16; Drawing M-22KJ02(Q), "Piping and Instrumentation Diagram Standby Diesel Generator A Intake F.O. and Start Air," Revision 17; and Drawing M-22KJ03(Q), "Piping and Instrumentation Diagram Standby Diesel Generator Lube Oil System," Revision 16.

On May 31, 2002, the inspectors performed a partial walkdown of emergency diesel generator Train B while Train A was out of service for maintenance. The inspectors compared the as-found condition of the emergency diesel generator with the requirements of the Final Safety Analysis Report; Technical Specifications, Drawing M-22KJ01(Q), "Piping and Instrumentation Diagram Standby Diesel Generator Cooling Water System," Revision 16; Drawing M-22KJ02(Q), "Piping and

Instrumentation Diagram Standby Diesel Generator B Intake F.O. and Start Air," Revision 17; and Drawing M-22KJ03(Q), "Piping and Instrumentation Diagram Standby Diesel Generator Lube Oil System," Revision 16.

On May 7, 2002, the inspectors performed a partial walkdown of safety injection Train B while Train A was out of service for maintenance. The inspectors compared the as-found condition of the safety injection system with the requirements of the Final Safety Analysis Report; Technical Specifications; Drawing M-22EJ01(Q), "Piping and Instrumentation Diagram Residual Heat Removal System," Revision 43; Drawing M-22EM01(Q), "Piping and Instrumentation Diagram High Pressure Coolant Injection System," Revision 27; and Drawing M-22BG03(Q), "Piping and Instrumentation Diagram Chemical and Volume Control System," Revision 16.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Fire Protection Walkdowns

a. Inspection Scope

The inspectors reviewed the following areas to determine if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capabilities, and maintained passive fire protection features in good material condition. The areas reviewed were:

April 10, 2002	Control Building safety-related switchgear rooms
April 18, 2002	Battery rooms
April 30, 2002	Emergency exhaust areas
May 2, 2002	South electrical penetration room
May 5, 2002	North and south mechanical penetration rooms
May 15, 2002	Elevation 2033 of the turbine building

The inspectors assessed these areas and verified that combustibles that were noted were being controlled in accordance with the following:

- Final Safety Analysis Report Section 9.5B, “Fire Hazards Analysis”
- Administrative Procedure APA-ZZ-00741, "Control of Combustible Material," Revision 16
- Administrative Procedure APA-ZZ-00701, "Control of Fire Protection Impairments," Revision 9

- Administrative Procedure APA-ZZ-00742, "Control of Ignition Sources," Revision 14

b. Findings

No findings of significance were identified.

.2 Fire Drill

a. Inspection Scope

On June 17, 2002, the inspectors observed an unannounced fire drill. The purpose of the drill was to evaluate the fire brigade's response to a fire in an area with restricted access for laying hoses. The simulated fire occurred in the upper cable spreading room (Room 3801). The inspectors observed fire brigade members donning protective clothing and self-contained breathing apparatus, entering the fire area, and utilizing fire preplan strategies. The inspectors evaluated communications between the fire brigade and control room and whether sufficient firefighting equipment was available to fight the fire. The fire drill was conducted using fire drill Scenario 02U03, which the inspectors reviewed for objectives and acceptance criteria. The inspectors also reviewed results of the critique conducted following the fire drill. Critique items were documented in Callaway Action Request System Number 200203841.

b. Findings

No findings of significance were identified.

.3 3-Hour Fire Door

a. Inspection Scope

The inspectors evaluated the circumstances that caused the 3-hour fire doors that separated the safety-related control room air conditioning units to be open.

b. Findings

The inspectors identified that the 3-hour rated fire door between the two safety-related trains of control room air conditioning were not closed and could not have performed their safety function. This finding was of very low safety significance and was a noncited violation of License Condition 2.C(5)(c) of the Operating License.

While touring the 2047 foot elevation of the control building on June 25, 2002, the inspectors noted that the 3-hour fire doors between the two safety-related control room air conditioning equipment rooms were not fully closed. Major equipment in the rooms included control room air conditioning units, control room pressurization fans, and control room pressurization system filter adsorber units. The latches at the top and bottom of one of the doors had been repositioned, preventing the doors from fully closing. The doors were labeled as fire doors. The inspectors notified operations

personnel and the latches were correctly positioned. The licensee believed that the latches were most likely repositioned to allow scaffolding to be moved through the door.

Although the fire doors were unlatched and not fully closed, the licensee failed to implement the compensatory measures required by Operating License Condition 2.C(5)(c). Failure to implement the compensatory measures was a violation (50-483/0202-01).

This finding is more than minor because if a fire occurred when the doors were not fully closed they may not have performed their function to prevent a fire from spreading from one fire area to another fire area. This finding affected the mitigating system cornerstone. This finding was found to be of very low safety significance (Green) using the fire protection significance determination process because the combustible load for the area was low and because the fire detectors on each side of the door were operable.

License Condition 2.C(5)(c) of the Callaway Plant Unit 1 Facility Operating License required, in part, that the licensee implement and maintain in effect all provisions of the approved fire program. The fire protection program required that 3-hour rated fire doors remain closed if compensatory measures were not in place. The license condition was not met since the 3-hour fire barrier that separated the control room air conditioning units was not intact and the licensee did not have compensatory measures in place. The licensee's failure to maintain in effect the provisions of the fire protection program was a violation of Operating License Condition 2.C(5)(c). This violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. This violation was entered into the licensee's corrective action program as Callaway Action Request System Number 200204041.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

In NRC Inspection Report 50-483/01-03, the inspectors evaluated the affects seasonal flooding would have on the plant. Safety-related plant structures were located at elevation 840 feet. This is approximately 300 feet above the highest flood of record on the Missouri river near the site. Since the probability of Missouri River flooding was minimal, the inspectors focused on the effect that heavy, sudden rains would have on the plant. An all season 6-hour rainfall with an accumulation of 25.4 inches was the governing maximum precipitation event affecting the surface runoff of safety-related structures. This evaluation was documented in Probable Maximum Precipitation Calculation SPA-18, Revision 0, Addenda 1 and 2. The inspectors concluded that the licensee had adequately evaluated the effect that the probable maximum precipitation event would have on the plant.

During the week of June 3, 2002, the inspectors reviewed Calculation SPA-18, Revision 3, Addendum 3, "Evaluate Probable Maximum Precipitation Analysis for Partial Backfill of Unit 2 Excavation and Installation of Jersey Barriers." The inspectors reviewed this calculation to determine if filling portions of the Unit 2 hole and installation

of jersey barriers would affect the previous probable maximum precipitation analysis. The inspectors also toured the site to verify that all other assumptions in the probable maximum precipitation calculation and other plant documents remained valid.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalifications (71111.11)

a. Inspection Scope

On June 5, 2002, the inspectors observed a licensed operator simulator exercise. The simulator exercise evaluated the operator's ability to recognize, diagnose, and respond to an increase in reactor coolant system activity followed by an anticipated transient without scram. The inspectors evaluated operator performance using the following:

- Emergency Plan Implementing Procedure EIP-ZZ-00101, "Classification of Emergencies," Revision 29
- Operations Technical Procedure OTO-BB-0005, "Reactor Coolant System High Activity," Revision 6
- Operations Technical Procedure OTO-AC-0003, "Turbine Impulse Pressure Channel Failure," Revision 1

The inspectors also evaluated crew communication, command and control, notifications to offsite agencies, consideration of protective actions for site personnel, command transfer to the technical support center, emergency plan usage, and fidelity of the simulator to the actual control room.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

During the inspection, the inspectors reviewed licensee implementation of the maintenance rule. The inspectors verified structure and component scoping, characterization, safety significance, performance criteria, and the appropriateness of the corrective action. The inspectors compared the licensee's implementation of the maintenance rule to the requirements outlined in 10 CFR 50.65; Administrative Procedure APA-ZZ-00303, "Classification of Systems," Revision 6; Engineering Procedure EDP-ZZ-01128, "Maintenance Rule and EPIX Programs," Revision 3;

Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2; and meeting minutes from various expert technical panel meetings. The inspectors reviewed the following components:

- Main condenser
- Service water Pump C
- Solid state trip device to motor control Center NG07F
- Steam generator water level indicators
- Electrical feeder breaker to component cooling water Pump A
- Class 1E electrical equipment air conditioning Unit A

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's assessment and management of selected maintenance to assess the effectiveness of risk management for planned and emergent activities. 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 NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2; and Engineering Procedure EDP-ZZ-01129, "Callaway Plant Risk Assessment," Revision 1. The inspectors evaluated the following risk assessment:

April 9, 2002	Risk assessment for removing emergency diesel Generator A from service
April 12, 2002	Risk assessment for removing electrical switchyard Breaker MDV-52-1 from service
May 10, 2002	Weekly risk assessment for scheduled maintenance and surveillance
June 19, 2002	Risk assessment of fire protection condition effecting the residual heat removal pump suction valves

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Evolutions and Events (71111.14)

.1 Foreign Material in the Condensate Storage Tank

a. Inspection Scope

The inspectors reviewed the licensee's actions to determine the effect that a leather pouch inside the condensate fill line from the demineralized water storage tank had on the auxiliary feedwater system.

b. Findings

The inspectors found that the auxiliary feedwater system could have been adversely affected by a leather pouch found in the condensate storage tank fill line. This finding was of very low safety significance.

On February 2, 2002, the condensate storage tank was filled to approximately 65 percent after having been drained, cleaned, and inspected during a plant shutdown to Mode 4. The condensate storage tank was being filled from the demineralized water storage tank through a flanged connection downstream of Valve APLV0002 (demineralized water makeup to the condensate storage tank), through a mobile demineralizer, and then to the condensate storage tank. To expedite filling the tank the demineralized water transfer pumps were operated at a higher than normal flow rate. The pumps were operated at approximately 225 gpm for 15.25 hours. Normally the pumps operated at 135 gpm for approximately 3 hours. On February 16, the condensate storage tank fill was completed using flow through the mobile demineralizer for approximately 11 hours at a normal fill rate. During completion of this filling evolution, with the mobile demineralizer connected, the licensee received indication that Valve APLV0002 would not close completely. Operations personnel initiated Work Request 220620 to document that Valve APLV0002 would not fully close.

On April 23, an internal inspection of Valve APLV0002 was performed. Maintenance personnel discovered portions of a leather weld rod pouch inside the valve. The weld rod pouch was removed and two sections were determined to be missing. One missing section was approximately 2 inches x 5 inches. The other section was approximately 3 inches x 10 inches. It could not be determined if the two missing pieces were intact or in smaller pieces.

On April 24, the licensee performed an inspection of the condensate storage tank and located pieces of the leather weld pouch on the floor of the tank and in the sump. However, approximately 25 square inches of the pouch could not be located. To locate the missing pieces, the licensee performed visual inspections of the condensate storage tank fill line from the tank internals to the fill line check valve as well as the auxiliary feedwater suction line. The licensee determined that the missing pieces, given their size, could potentially affect only the turbine-driven auxiliary feedwater pump. The licensee performed inspections of the suction eye and the seal water piping orifice to the lube oil cooler, mechanical seal flush lines, and bearing coolers for the turbine-driven auxiliary feedwater pump. No material was found in any of these inspections.

The licensee performed an evaluation and concluded that the flow velocities in the tank where the leather was located, on the floor and in the sump, were too low to move the leather pieces towards the auxiliary feedwater suction lines.

The inspectors also asked the licensee how the auxiliary feedwater system would have been affected if the entire leather pouch that was lodged inside Valve APLV0002 had entered the condensate storage tank. The licensee stated that, if this occurred, there was the potential for the leather pouch to adversely affect a train of auxiliary feedwater if the pouch was drawn into one of the pump suctions.

The licensee concluded that the missing pieces were most likely inside the mobile demineralizer. The mobile demineralizer had been connected downstream of Valve APLV0002 and filtered the flow prior to injecting into the condensate storage tank. The contents of the demineralizer had been previously discarded and were not available for inspection following identification of this issue.

The licensee analyzed the leather that was removed from the floor of the tank and the sump. The analysis concluded that the pouch was at least 10 years old. The licensee believed that the pouch may have been introduced into the condensate transfer system during initial plant construction. However, the licensee could not definitively determine when the pouch was introduced into the system.

This finding was more than minor because the leather weld rod pouch entering the condensate storage tank could have adversely affected the auxiliary feedwater system. This finding affected the mitigating system cornerstone. Using the reactor safety significance determination process, this finding was found to be of very low safety significance (Green) because no loss of safety function occurred and only one of three auxiliary feedwater pumps would have been affected. This finding is documented in Callaway Action Request System Number 200202678.

.2 (Closed) Unresolved Item 50-483/0106-01: Gas binding of auxiliary feedwater pump

This unresolved item was determined to be a violation of low to moderate safety significance (White). Details associated with this violation are documented in NRC Inspection Report 50-483/02-07 dated March 21, 2002, and the Final Significance Determination for a White Finding and Notice of Violation Report 50-483/02-07, Callaway Plant, dated April 9, 2002.

.3 (Closed) Violation 05000483/0109-01(EA-01-130): The inspectors reviewed the licensee's root cause determination and associated corrective action document (Corrective Action Request System Number 200100515) pertaining to the violation for essential service water Pump B being out of service for 132 hours. The licensee's evaluation identified the primary root causes of the performance issues to be: (1) personnel did not know that they needed to secure the drain hose because corrective action from a previous event did not preclude foreign material from entering the suction bay for the essential service water pump, (2) the drain hose was not adequately secured because there was no procedure for the job, (3) the drain hose was not adequately secured because important information that should have been covered during the prejob brief was omitted, (4) personnel did not know that they needed to secure the drain hose because safety precautions and warnings were not included in the work package, (5) personnel that saw or were informed of the presence of a funnel without a drain hose did not have a questioning attitude, (6) the control room took over

one hour to enter Technical Specification 3.0.3 after declaring Train B of the essential service water system inoperable because personnel found the procedure difficult to use, and (7) the control room took over one hour to enter Technical Specification 3.0.3 after declaring Train B of the essential service water system inoperable because training was not repeated enough for information to be learned and skills practiced.

On March 13, 2002, the NRC completed Supplemental Inspection Procedure 95002 and documented the inspection findings in NRC Inspection Report 50-483/02-08. The inspectors concluded that the completed corrective actions were effective in addressing the associated root causes. However, the team observed that the root cause analyses for significance Level 2 corrective action request system items were sometimes not thorough and were frequently disjointed. The licensee acknowledged this potential problem and initiated Corrective Action Request System Number 200201332 to address this observation.

The inspectors determined that the licensee's corrective action adequately addressed the root cause and procedure modifications to institutionalize the corrective action. NRC Inspection Reports 50-483/01-09 and 50-483/02-08 documented the details associated with this violation.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the technical adequacy of several operability evaluations to verify that they were sufficient to justify continued operation of a system, structure, or component. The inspectors verified that, although equipment was degraded, the operability evaluation provided adequate justification that the equipment could still meet its Technical Specification, Final Safety Analysis Report, and design bases requirements and that any potential risk increase attributed to the degraded equipment was thoroughly evaluated. Operability evaluation for the following components were reviewed:

April 18, 2002	Steam line pressure negative rate high function not properly tested
June 1, 2002	Refueling water storage tank to fuel pool cleanup pumps upstream isolation valve
June 7, 2002	Response time testing of power range neutron flux positive rate trip function
July 3, 2002	Control room air conditioning Unit B
July 6, 2002	Evaluation of leather intrusion into the auxiliary feedwater system
June 17, 2002	Diesel overspeed trip switch vibration

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors verified that postmaintenance tests were adequate to verify system operability and functional capabilities. The inspectors verified that testing met design and licensing basis requirements, Technical Specifications, the Final Safety Analysis Report, Inservice Testing, and licensee administrative procedures. The inspectors reviewed testing results for the following components:

May 10, 2002	Chemical and volume control system centrifugal charging Pump A discharge to reactor coolant pump seals throttle valve
May 16, 2002	Chemical and volume control system containment isolation valves
May 30, 2002	Containment spray pump Train A motor-operated supply and discharge valves
June 3, 2002	Essential service water Train A to service water downstream isolation valve

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed or reviewed the following surveillance tests to ensure the systems tested were capable of performing their safety function and to assess their operational readiness. Specifically, the inspectors verified that the following surveillance tests met Technical Specifications, ASME Section XI test requirements, the Final Safety Analysis Report, and licensee procedural requirements:

April 30, 2002	Operations Procedure OSP-SA-0003, "Emergency Core Cooling System Flow Path Verification and Venting," Revision 15
May 1, 2002	Operations Procedure OSP-EG-P01AC, "CCW Train ‘A’ Pump and Valve Inservice Test," Revision 19
May 3, 2002	Operations Procedure OSP-AL-P001A, "Motor Driven Auxiliary Feedwater Pump ‘A’ Inservice Test," Revision 29

May 9, 2002	Operations Procedure OSP-NE-0001A, "Standby Diesel Generator 'A' Periodic Tests," Revision 10
June 5, 2002	Operations Procedure OSP-NE-0001A, "Standby Diesel Generator 'A' Periodic Tests," Revision 10
June 19, 2002	Operations Procedure OSP-SA-0013A, "Train 'A' SIS Slave Relay Test," Revision 9

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed the licensee's first quarter 2002 performance indicator data submittal to verify its accuracy and completeness. The inspectors reviewed control room logs, maintenance documents, surveillance tests, and corrective action reports to verify that the data was properly collected and reported in accordance with NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 2. The following performance indicators were reviewed:

- Safety system unavailability for emergency ac power system
- Reactor coolant system activity

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Inadequate Corrective Action for Diesel Generator Overspeed Switch Deficiency

a. Inspection Scope

The inspectors reviewed the circumstances regarding repairs to emergency diesel Generator B overspeed trip switch. The inspectors also evaluated prior corrective actions associated with the overspeed trip switch and assessed the effectiveness of those corrective actions as required by 10 CFR Part 50, Appendix B, Criterion XVI.

b. Findings

Corrective actions taken by the licensee to ensure that the emergency diesel Generator B overspeed trip switch remained intact were inadequate. This finding was of very low safety significance and was a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI.

The inspectors reviewed the corrective actions associated with Callaway Action Request System Number 200202342. This document, dated April 9, 2002, was initiated when the system engineer noted that the overspeed trip switch on emergency diesel Generator B was loose. The switch was constructed of two pieces held together with two screws. The screws were loose and a gap existed between the two halves of the switch. In this configuration, the system engineer questioned whether or not the emergency diesel generator could perform its function. The emergency diesel generator was declared inoperable to repair the switch.

During repair, maintenance personnel noted that the screws that held the overspeed trip switch in place were damaged. Specifically, the threads were damaged. This caused insufficient thread engagement and the screws were able to work loose over time. As immediate corrective action, the licensee replaced the overspeed trip switch and installed new screws and thread sealant. With adequate thread engagement, the switch was subsequently determined to be operable.

The licensee identified that the same switch had failed on June 21, 2001. In this incident, the same screws were loose allowing the switch to separate. The licensee declared the emergency diesel generator inoperable and entered this issue into the corrective action system as Callaway Action Request System Number 200103939. The corrective action document for this failure was assigned a significance Level 2. Significance Level 2 was assigned to conditions that were significant conditions adverse to quality and required that a thorough root cause be performed per Administrative Procedure APA-ZZ-00500, "Corrective Action Program," Revision 31.

As corrective action, maintenance personnel tightened the screws that were loose and verified that the switch was operable. The licensee did not conduct a root cause analysis nor identify a root cause for the screws being loose. However, it was believed that the screws came loose due to vibration.

The inspectors asked what the result was of the root cause analysis for the June 21, 2001, failure. Licensee personnel stated that performing a root cause analysis was an option, not a requirement. The inspectors pointed out that step 7.8.2.3 of Administrative Procedure APA-ZZ-00500, "Corrective Action Program," Revision 31, required that a thorough root cause analysis be performed for significance Level 2 documents. Step 2.35.2 required that the root cause be performed using the Callaway Root Cause Manual. Had a root cause analysis been performed, it may have prevented the April 9, 2002, failure.

The inspectors then reviewed the action taken to address the April 9, 2002, failure. This corrective action document was also assigned a significance Level 2. However this document was still open at the end of the inspection period.

In addition to failing to perform a thorough root cause analysis to determine why the screws in the overspeed trip switch failed, the corrective action taken to address the June 21, 2001, switch failure was inadequate because the same switch failed on April 9, 2002. Failing to ensure adequate corrective action was taken was a violation (50-483/0202-02).

This finding is more than minor and had an actual impact on safety because the emergency diesel generator overspeed trip switch deficiency recurred and required removing the diesel generator from service to repair its overspeed trip switch. Corrective action from the prior occurrence was ineffective. This finding affected the mitigating system cornerstone. The finding was found to be of very low safety significance (Green) using the reactor safety significance determination process, because the emergency diesel generator was out of service for a short time (approximately 7 hours) and the other emergency diesel generator was available. This finding included crosscutting aspects in the area of problem identification and resolution.

Appendix B of 10 CFR Part 50, Criterion XVI, required, in part, that significant conditions adverse to quality be promptly identified and corrected and that the cause of the condition be determined and corrective action taken to preclude repetition. On April 9, 2002, the emergency diesel generator was taken out of service to repair the overspeed trip switch. The screws that held the switch together had become loose. The same screws were found loose on June 21, 2001, and required the emergency diesel generator to be removed from service for repair again. Although the licensee's corrective action system required that a thorough root analysis be performed, the inspectors identified it was not performed as required by the corrective action program. The corrective action that was taken in response to the June 21, 2001, failure was inadequate and did not preclude the April 9, 2002, failure. This violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. This issue is in the licensee corrective action program as Callaway Action Request Numbers 200103939 and 200202342 .

.2 Corrective Action Program Implementation

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed four licensee quality assurance audits, two self-assessments, and one quality assurance surveillance report. As the result of this review, the inspectors selected approximately 60 Callaway action request system reports that were identified in these audit, self-assessment, and surveillance reports to determine if issues were being entered into the corrective action program for evaluation and resolution. The reports reviewed are listed in the attachment to this report.

(2) Findings

The inspectors determined that the licensee's quality assurance audit reports, self-assessment reports, and the quality assurance surveillance report were of appropriate depth and that the licensee entered the findings from these reports into the corrective action program.

b. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors conducted interviews with 10 quality assurance auditors and 11 security personnel, which represented the quality assurance and security organizations. The interviewees included both supervisory and nonsupervisory personnel. These interviews were conducted to assess the effectiveness of corrective actions implemented by the licensee.

(2) Issues and Findings

Based on these interviews, the inspectors concluded that, with a few isolated exceptions which did not involve safety issues, the licensee's corrective actions were effective.

c. Assessment of Safety Conscious Work Environment

(1) Inspection Scope

The inspectors conducted interviews with 10 quality assurance auditors and 11 security personnel, which represented the quality assurance and security organizations. The interviewees included both supervisory and nonsupervisory personnel. These interviews were conducted to develop a general view of the safety culture at the Callaway Plant and a determination of the effectiveness of the employee concerns program. These interviews assessed whether conditions existed that would challenge the establishment of a safety-conscious work environment.

(2) Findings

The inspectors noted that all personnel interviewed stated they had no reservations entering concerns into the corrective action program and/or raising safety issues to management. However, a small number of interviews revealed some isolated instances where personnel were reluctant to submit issues to the employee concerns program. Those personnel who were reluctant to submit issues to the employee concerns program indicated a general dissatisfaction with management response and a lack of feedback regarding their concerns.

4OA6 Management Meetings

Exit Meeting Summary

The operations engineer presented the inspection results to Mr. M. Taylor, Manager, Quality Assurance, and other members of the licensee management at the conclusion of the inspection on April 4, 2002.

The resident inspectors presented their inspection results to Mr. R. Affolter, Vice President - Nuclear, and other members of licensee management on July 9, 2002.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Affolter, Vice President - Nuclear
J. Blosser, Manager, Regulatory Affairs
S. Bond, Superintendent, System Engineering
M. Elliott, Shift Security Supervisor
J. Laux, Manager, Operations Support
V. McGaffic, Superintendent, Performance Improvement
J. McGraw, Superintendent Technical Support, Nuclear Engineering
M. Reidmeyer, Regional Regulatory Affairs Supervisor
C. Slizewski, Quality Assurance Audit Group Supervising Engineer
M. Taylor, Quality Assurance Manager
J. Tunink, Consulting Technical Support Engineer Maintenance Rule Program
W. Witt, Plant Manager

ITEMS OPENED AND CLOSED

Opened

50-483/0202-01	NCV	Failure to maintain the provisions of the fire protection program (Section 1R05).
50-483/0202-02	NCV	Failure to take adequate corrective action (Section 4OA2).

Closed

50-483/0202-01	NCV	Failure to maintain the provisions of the fire protection program (Section 1R05).
50-483/0106-01	URI	Gas binding of auxiliary feedwater pump (Section 1R14)
50-483/0109-01	VIO	Inoperable Essential Service Water Pump (Section 1R22)
50-483/0202-02	NCV	Failure to take adequate corrective action (Section 4OA2).

DOCUMENTS REVIEWED

The following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

Procedures

DTI-029, Quality Assurance Audit Guide, Revision 1

Callaway Action Request System

200107421	200104569	200102607	200103507	200107726
200107765	200105238	200101990	200105310	200103115
200103980	200105232	200101738	200105626	200200253
200101882	200105253	200100435	200105363	200200255
200100449	200105693	200100240	200104992	200200265
200101247	200105797	200102429	200105022	200200261
200100158	200105396	200100319	200105059	200104113
200103511	200104571	200100529	200105089	200104114
200103567	200106664	200100556	200105358	200104112
200103506	200106985	200100166	200106640	200104117
200103508	200107127	200100168	200107139	200104118
200106154	200107511	200101892		

Miscellaneous Documents

Audit Report #AP01-001, First Period 2001 Quality Assurance Audit Report, dated June 26, 2001

Audit Report #AP01-002, Second Period 2001 Quality Assurance Audit Report, dated October 2, 2001

Audit Report #AP01-003, Third Period 2001 Quality Assurance Audit Report, dated January 31, 2002

SA01-SE-001, Self-Assessment of Security, dated May 7-11, 2001

2002 Quality Assurance Surveillance Report SP02-001, Assessment of Fighting Position Barriers, dated January 17, 2002

Independent Assessment Report - AP01-005 & SA01-QA-001, Independent Assessment of the Operating Quality Assurance Program, dated July 2, 2001

Audit Report #AP01-007, Audit of Callaway Plant's Fitness-for-Duty Program, dated December 16, 2001