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

August 3, 2005

Charles D. Naslund, Senior Vice
President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT - NRC INTEGRATED INSPECTION REPORT 05000483/2005003

Dear Mr. Naslund:

On June 23, 2005, the NRC completed an inspection at your Callaway Plant. The enclosed report documents the inspection findings which were discussed on June 27, 2005, 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.

This report documents two findings that were evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has 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. If you contest these 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 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) 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/

William B. Jones, Chief
Project Branch B
Division of Reactor Projects

Docket: 50-483
License: NPF-30

Enclosure:
NRC Inspection Report
05000483/2005003
w/attachment: Supplemental Information

cc w/enclosure:
Professional Nuclear Consulting, Inc.
19041 Raines Drive
Derwood, MD 20855

John O'Neill, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, N.W.
Washington, DC 20037

Mark A. Reidmeyer, Regional
Regulatory Affairs Supervisor
Regulatory Affairs
AmerenUE
P.O. Box 620
Fulton, MO 65251

Missouri Public Service Commission
Governor's Office Building
200 Madison Street
P.O. Box 360
Jefferson City, MO 65102

Mike Wells, Deputy Director
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Rick A. Muench, President and
Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

Dan I. Bolef, President
Kay Drey, Representative
Board of Directors Coalition
for the Environment
6267 Delmar Boulevard
University City, MO 63130

Les H. Kanuckel, Manager
Quality Assurance
AmerenUE
P.O. Box 620
Fulton, MO 65251

Director, Missouri State Emergency
Management Agency
P.O. Box 116
Jefferson City, MO 65102-0116

Scott Clardy, Director
Section for Environmental Public Health
P.O. Box 570
Jefferson City, MO 65102-0570

Keith D. Young, Manager
Regulatory Affairs
AmerenUE
P.O. Box 620
Fulton, MO 65251

David E. Shafer
Superintendent, Licensing
Regulatory Affairs
AmerenUE
P.O. Box 66149, MC 470
St. Louis, MO 63166-6149

Certrec Corporation
4200 South Hulen, Suite 630
Fort Worth, TX 76109

Chief Technological Services Branch
National Preparedness Division
Department of Homeland Security
Emergency Preparedness & Response Directorate
FEMA Region VII
2323 Grand Boulevard, Suite 900
Kansas City, MO 64108-2670

Electronic distribution by RIV:
Regional Administrator **(BSM1)**
DRP Director **(ATH)**
DRS Director **(DDC)**
DRS Deputy Director **(KMK)**
Senior Resident Inspector **(MSP)**
Branch Chief, DRP/B **(WBJ)**
Senior Project Engineer, DRP/B **(RAK1)**
Team Leader, DRP/TSS **(RLN1)**
RITS Coordinator **(KEG)**
DRS STA **(DAP)**
J. Dixon-Herrity, OEDO RIV Coordinator **(JLD)**
RidsNrrDipmlipb
CWY Site Secretary **(DVY)**
W. A. Maier, RSLO **(WAM)**

SISP Review Completed: __wbj__ ADAMS: : Yes ☐ No Initials: __wbj__
: Publicly Available ☐ Non-Publicly Available ☐ Sensitive : Non-Sensitive

R:_REACTORS_CW\2005\CW2005-03RP-MSP.wpd

RIV:RI:DRP/B	SRI:DRP/B	PE:DRP/B	SPE:DRP/B	
DEDumbacher	MSPeck	CRStancilJr.	RAKopriva	
T - WBJones	***E - WBJones***	***/RA/***	***/RA/***	
8/1/05	8/1/05	8/1/05	8/2/05	
C:DRS/EB2	C:DRS/EB1	C:DRS/PSB	C:DRS/OB	C:DRP/B
LJSmith	JAClark	MPShannon	RELantz	WBJones
GDReplogle for	***/RA/***	***/RA/***	***/RA/***	***/RA/***
8/1/05	8/1/05	8/1/05	8/1/05	8/3/05

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-483
License:	NPF-30
Report:	05000483/2005003
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	March 25 through June 23, 2005
Inspectors:	M. S. Peck, Senior Resident Inspector D. E. Dumbacher, Resident Inspector R. Lantz, Senior Emergency Preparedness Inspector M. Murphy, Senior Operations Engineer R. Kopriva, Senior Project Engineer, Branch B L. Ricketson, P.E., Senior Health Physicist C. Stancil, Project Engineer, Branch B E. Owen, Reactor Inspector
Approved By:	W. B. Jones, Chief, Project Branch B

Enclosure

SUMMARY OF FINDINGS

IR 05000483/2005003; 03/25 - 06/24/2005; Callaway Plant: Fire Protection, Personnel Performance During Nonroutine Plant Evolutions

This report covered a 3-month inspection by region based emergency preparedness, health physics, and reactor inspectors; region based operations and project engineers; and resident inspectors. Two Green noncited violations 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.

Inspector-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. A self-revealing noncited violation of Technical Specification 5.4.1.a was identified after an unplanned auxiliary feedwater actuation and reactor trip signal occurred while shut down due to an inadequate general operating procedure. This finding is associated with the crosscutting area of human performance because the operations procedure was inadequate for all aspects of Mode 3 operation and the operations crew demonstrated poor integrated plant decision making in not utilizing the startup feedwater pump. This issue was entered into the corrective action program as Callaway Action Request 200501949.

  This finding is greater than minor because the procedural adequacy attribute of the initiating events cornerstone objective is affected. The inspectors concluded that the loss of condensate feed to the steam generators while in Hot Standby, because the condensate pump shutoff pressure was reached, resulting in an auxiliary feedwater actuation and reactor trip signal was a transient initiator affecting the initiating events cornerstone. The inspectors determined this finding to be of very low safety significance because the condition did not contribute to both the likelihood of a reactor trip (all control rods were previously inserted) and the unavailability of mitigating equipment functions (Section 1R14).

Cornerstone: Mitigating System

- Green. An NRC-identified noncited violation of Technical Specification 5.4.1.d, "Fire Protection Program," was identified after Union Electric failed to maintain the integrity of an auxiliary building fire door that was required to provide a 3-hour fire barrier. This finding has crosscutting aspects of problem identification and resolution. Union Electric had prior opportunities to self-identify the degraded door, and previous corrective actions for other degraded fire door issues were not adequate to prevent this occurrence. This issue was entered into the corrective action program as Callaway Action Request 200503431.

This finding is greater than minor because the reactor safety mitigating systems cornerstone attribute to provide protection against external factors was affected. The inspectors used Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” to analyze this finding because the degraded door is a fire barrier related to Union Electric’s fire protection defense-in-depth strategies. The inspectors concluded that the condition was intermittent and thus had a low degradation rating. The inspectors concluded this finding is of very low safety significance because of the low degradation level (Section 1R05).

REPORT DETAILS

Summary of Plant Status: The Callaway Plant was operating at full power at the beginning of the inspection period. On March 26, 2005, Union Electric completed a Technical Specification required shutdown due to an inoperable essential service water (ESW) train. Union Electric Company (Union Electric) completed repairs and returned the plant to full power on April 2, 2005. On June 17, 2005, Union Electric completed a second Technical Specification required shutdown due to an inoperable main steam line isolation logic channel. Union Electric completed the forced outage and returned the unit to full power on June 18, 2005. Union Electric operated the unit at full power for the remainder of the inspection period.

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

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial System Walkdowns. The inspectors completed four partial system walkdowns during the inspection period (four inspection samples). The inspectors performed the walkdowns to verify component alignment and subsystem operability. The inspectors used the Final Safety Analysis Report (FSAR), Technical Specifications, and the procedures and drawings listed in the attachment as the bases for acceptability. The inspectors completed the following partial system walkdowns:

- Ultimate heat sink and cooling tower Train A while the redundant train was out of service for scheduled maintenance. The inspectors walked down components located in the cooling tower and ESW pump room on April 19, 2005.

- ESW Train A while the redundant train was out of service for scheduled maintenance. The inspectors walked down components located in the auxiliary, control, and diesel generator rooms on April 19 and 20, 2005.

- Emergency diesel generator (EDG) Train A while the redundant train was out of service for scheduled maintenance. The inspectors walked down components located in the control and diesel generator buildings on April 20, 2005.

- Diesel building heating and ventilation Train A while the redundant train was out of service for scheduled and emergent maintenance. The inspectors walked down components in the control and diesel generator buildings on June 17, 2005.

Complete System Walkdown

The inspectors conducted a detailed walkdown, condition review, and alignment verification of the containment spray (CS) system between June 14-17, 2005 (one inspection sample). The walkdown included system components located in the control and auxiliary buildings. The inspectors used the FSAR, Technical Specifications, and procedures and drawings listed in the attachment to verify proper system alignment.

The inspectors also performed a review of the system health reports to determine whether Union Electric had identified any significant maintenance problems with the system.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Routine Fire Inspection Walkdowns

a. Inspection Scope

The inspectors performed 12 fire zone walkdowns to verify that Union Electric maintained fire areas in accordance with the Fire Hazards Analysis Report (12 inspection samples). The fire zones were chosen based on their risk significance as described in the individual plant examination of external events. The walkdowns focused on control of combustible materials and ignition sources, operability and material condition of fire detection and suppression systems, and the material condition of passive fire protection features. The following fire zones were inspected:

- Fire Area A-23, Main steam and feedwater valve compartment, March 30, 2005
- Fire Area A-27, Reactor trip switchgear area, March 30, 2005
- Fire Area A-3, Boric acid tank rooms, April 13, 2005
- Fire Area F-4, Air handling equipment room, April 13, 2005
- Fire Area F-5, Electrical equipment room, April 13, 2005
- Fire Area U-104, ESW Train A pump room, April 24, 2005
- Fire Area U-105, ESW Train B pump room, April 24, 2005
- Fire Area A-13, Auxiliary feedwater (AFW) pump room, April 28, 2005
- Fire Area A-14, AFW pump room, April 28, 2005
- Fire Area A-15, AFW pump room, April 28, 2005
- Fire Area A-1, AFW valve room, May 18, 2005
- Fire Area T-2, Turbine building 50 feet north of auxiliary building, 2000 foot elevation, May 31, 2005

b. Findings

Degraded Fire Door

Introduction. The inspectors identified a Green NCV of Technical Specification 5.4.1.d, "Fire Protection Program," after Union Electric failed to maintain the integrity of an auxiliary building fire door.

Description. The inspectors identified a degraded latching mechanism on auxiliary building fire Door 11752 on May 18, 2005. The latch failed to consistently engage, resulting in the loss of the rated fire confinement capability. The fire door provided a 3-hour barrier between fire Areas A-6 and A-8. Union Electric had opportunities to identify the degraded fire door which had intermediately failed to latch. Specifically, security and operations personnel passed through the door several times each shift. The inspectors previously identified degraded auxiliary building fire door latches on November 1, 2004 (described as NCV 05000483/2004005-01), and November 28, 2003, (described in CAR 200308563).

Analysis. Failure of Union Electric to maintain the integrity of the fire door is a performance deficiency. This finding is greater than minor because the degraded fire barrier affected the mitigating systems cornerstone objective to ensure response to an initiating event and the attribute providing protection against external factors. The inspectors used Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," to analyze the finding because the degraded door is a fire barrier related to Union Electric's fire protection defense-in-depth strategies. The inspectors concluded that the condition is a fire confinement finding with a low degradation rating due to the intermittent performance of the door latch. This finding is of very low safety significance because the unique potential damage targets in fire Area A-8 had additional protective measures and the door would have provided at least 20 minutes fire endurance protection. Also, the inspectors concluded that no fixed or in situ fire ignition sources or combustible or flammable materials were positioned such that the degraded door would have been subject to direct flame impingement. The inspectors concluded that this finding has crosscutting aspects of problem identification and resolution. Union Electric had several opportunities to identify that the fire door was degraded and corrective actions for other degraded fire doors were not effective to prevent this occurrence.

Enforcement. Technical Specification 5.4.1.d required that Union Electric maintain a fire protection program. Union Electric used Administrative Procedure APA-ZZ-00700, "Fire Protection Program," to implement the fire protection program.
Procedure APA-ZZ-00700 required Union Electric to maintain fire door integrity as described in Procedure APA-ZZ-00701, "Control of Impairments of Fire Protection Systems and Components," and FSAR Section 9.5.B, "Fire Hazards Analysis." Contrary to the above, Union Electric failed to maintain the integrity of fire Door 11752 as described in Procedure APA-ZZ-00701 and FSAR Section 9.5.B. Because this finding is of very low safety significance and was entered into Union Electric's corrective action

program (CAR 200503431), the violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000483/2005003-01).

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors completed one flood protection walkdown of the AFW pump rooms on May 18, 2005 (one inspection sample). The inspectors conducted the walkdown to verify that Union Electric implemented adequate protection for equipment below the postulated flood line, including electrical conduits, holes, and wall penetrations. The inspection included a walkdown of the watertight doors, common drains, sumps, sump pumps, level alarms, and control circuits. The inspectors used criteria contained in Operability Determination 200503330; FSAR Table 3.11(B)-6, "Flood Levels in the Auxiliary Building and Containment," and Bechtel Calculation Sheet FL-13, "Auxiliary Building Area 5 Flooding," as the bases for acceptability of the plant configuration.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Activities Review by Resident Staff (71111.11Q)

a. Inspection Scope

The inspectors observed two licensed operator simulator training exercises and critiques (two inspection samples). The inspectors observed the exercises to assess operator performance and evaluator critiques during high-risk operator actions associated with the emergency plan, lessons learned items, and plant operational experiences. The inspectors observed Licensed Operator Continued Training Simulator Scenarios DS-08, "Feed Line Break Inside Containment with Coolant Charging Pump (CCP) and Steam Line Isolation System (SLIS) Failures," and DS-37, "Station Blackout due to Seismic Event," on May 19, 2005.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

The inspectors reviewed three samples of equipment maintenance problems (three inspection samples). The inspectors performed the review to verify that Union Electric effectively implemented 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." The inspectors focused on maintenance rule characterization of failed components, risk significance, determination of the

(a)(1) classification, corrective actions, and the appropriateness of performance goals and monitoring criteria. The inspectors also evaluated emergent equipment issues to determine if problems were identified at the appropriate level and entered into the corrective action program. The inspectors used Administrative Procedure EDP-ZZ-01128, "Maintenance Rule Program," Revision 6, during the review. The inspectors performed an in-office review of the following Maintenance Rule (a)(1) evaluations:

- CAR 200407982, AFW Train A flow control Valve ALHV0009
- CAR 200409592, Reactor coolant Pump D component cooling water thermal barrier return Valve BBHV0016
- CAR 200500143, Component cooling water Train B pump coupling slinging grease

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed six risk assessments for planned or emergent maintenance activities to verify that Union Electric met the requirements of 10 CFR 50.65(a)(4) for assessing and managing increases in plant risk (six inspection samples). The inspectors compared Union Electric's risk assessment and risk management actions 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." The inspectors reviewed the following risk assessments:

- Unplanned reactor protection system corrective maintenance on March 27, 2005. The inspectors performed an in-office review of Union Electric's risk assessment and observed implementation of the compensatory actions from the control room.
- Planned EDG Train B maintenance outage on April 19, 2005. The inspectors performed an in-office review of Union Electric's risk assessment and observed implementation of the compensatory actions from the control room.
- Unplanned ESW Train B maintenance outage on April 20, 2005. The inspectors performed an in-office review of Union Electric's risk assessment and observed implementation of the compensatory actions from the control room.

- AFW pump valve operability test on May 9, 2005. The inspectors performed an in-office review of Union Electric's risk assessment.

- Planned turbine-driven AFW pump maintenance outage on May 17, 2005. The inspectors performed a review of Union Electric's risk assessment and observed implementation of the compensatory actions from the control room.

- Planned and emergent emergency diesel generator Train B maintenance on June 15-18, 2005. The inspectors performed an in-office review of Union Electric's risk assessment, observed implementation of the compensatory actions from the control room, and walked down components in the diesel generator, battery, and control rooms.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

a. Inspection Scope

The inspectors reviewed two nonroutine plant events for personnel performance (two inspection samples). The inspectors reviewed each event to verify proper operator response. The inspectors used operator logs, plant computer data, charts, and CARs to determine what occurred, how the operators responded, and whether the response was in accordance with plant procedures. The inspectors selected the following events:

- Unplanned AFW actuation and reactor trip due to inadequate test procedures on March 29, 2005 (CAR 2005019749)

- Unplanned Technical Specification required reactor shutdown due to an inoperable main steam line isolation logic channel on June 16, 2005 (CAR 200504163)

b. Findings

Unplanned AFW Actuation and Reactor Trip Signal due to an Inadequate Procedure

Introduction. A self-revealing Green finding was identified after an unplanned AFW actuation and reactor trip signal occurred while shutdown due to an inadequate general operating procedure and poor crew decision making.

Description. An unplanned automatic AFW actuation and reactor trip signal occurred on March 29, 2005, due to an inadequate procedure. While shutdown, operations personnel increased reactor coolant system (RCS) temperature from 415EF to 485EF (saturation pressure 590 psia) in preparation for a feedwater isolation valve (FWIV) leak test. During heatup (Mode 3), operations personnel maintained steam generator levels

with a condensate pump. Steam generator level oscillations occurred as the RCS temperature approached 485EF. This RCS temperature corresponds to a steam generator pressure near the shut-off head of the condensate pump. The operators used General Operating Procedure OTG-ZZ-00001, “Plant Heatup Cold Shutdown to Hot Standby,” to increase RCS temperature. However, Procedure OTG-ZZ-00001 did not require use of a pump capable of higher discharge pressure before heatup. The low steam generator levels caused by the reduction in condensate flow resulted in an AFW actuation signal. The operating crew had discussed use of the startup feed pump prior to heatup; however, the operating crew decided not to place the pump in service because Procedure OTG-ZZ-00001 did not require the action.

Analysis. Union Electric's use of an inadequate procedure was a performance deficiency. This finding is greater than minor because the procedural quality attribute of the initiating events cornerstone objective is affected. The inspectors used the significance determination process for at power reactor inspection findings to analyze this finding because the reactor trip was a transient initiator, affecting the initiating events cornerstone. Consideration was given, as described in NRC Manual Chapter 0609, Appendix G, Shutdown Operations Risk Determination Process, that: (1) decay heat was less compared to full power potentially allowing for more time for operator recovery, (2) some mitigating systems may have required manual operation versus automatic operation, and (3) some containment systems may not be required to be operable, potentially increasing the likelihood of containment failure. The inspectors determined this finding to be of very low safety significance (Green) because the condition did not contribute to both the likelihood of a reactor trip and the unavailability of mitigating equipment functions. This finding is similar to Example 4.b in Manual Chapter 0612, Appendix E. This finding is associated with the crosscutting area of human performance. The operations procedure was inadequate to provide feedwater flow to the steam generators for all conditions applicable to Mode 3 operations using only the condensate pumps and the operations crew demonstrated poor integrated plant decision making in determining not to utilize the startup feedwater pump.

Enforcement. Technical Specification 5.4.1(a) required written procedures to be established, implemented, and maintained as recommended by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A recommends procedures for general plant operations from cold shutdown to hot standby. Contrary to this requirement, General Operating Procedure OTG-ZZ-00001 did not contain enough detail to successfully control steam generator levels during FWIV troubleshooting on March 29, 2005. Because of the very low safety significance and Union Electric’s action to place this issue in their corrective action program (CAR 200501949), this violation is being treated as an NCV in accordance with Section VI.A.I of the Enforcement Policy (NCV 05000483/2005003-02).

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed four operability determinations involving risk significant equipment during the inspection (four inspection samples). The inspectors reviewed the technical adequacy of the operability determinations to verify that operability was justified and compensatory measures were appropriate and controlled. The inspectors reviewed plant status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability determination was warranted for degraded components. The inspectors used the FSAR, Technical Specifications, and design basis documents as the bases to determine the technical adequacy of licensee prepared operability determinations. The inspectors reviewed the following equipment conditions and associated operability determinations:

- Union Electric's assumptions for equipment out-of-service log Entry 13224, Degraded liquid radwaste containment isolation Valve HBV7150, isolating the reactor coolant drain tank hydrogen vent, on April 14, 2005
- Operability Determination 200501372, Uncontrolled breach in the control building habitability envelope, on February 26, 2005
- Operability Determination 200503330, DSK 13311, DSK 13251, and DSK 13261, Area 5 AFW pump rooms watertight doors, on May 17, 2005
- Operability Determination 200502742, Containment instrument tunnel sump level float switch Level Transmitter LFLT0079, on May 18, 2005

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors performed an evaluation of the cumulative effect of operator workarounds and a detailed review of the degraded main feedwater bypass Valves AEV0257 and AEV0258 (two inspection samples). The inspectors reviewed the April 22, 2005, operator workaround and burden lists to assess the effect of the workarounds on the ability of operators to implement plant emergency procedures. The inspectors completed the review to verify that the workarounds did not challenge the operators' capability to respond to plant transients and events. The inspectors also reviewed the "Main Control Room Annunciator Defeat Log" on April 22, 2005, to ensure all degraded annunciators were properly screened for operator workarounds.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed and/or observed eight risk significant postmaintenance tests (PMTs) to verify that Union Electric adequately demonstrated the safety function of components affected by maintenance activities (eight inspection samples). The inspectors verified that testing procedures were properly reviewed, approved, and incorporated appropriate acceptance criteria. The inspectors used information in the Technical Specifications, the FSAR, and Section XI of the American Society of Mechanical Engineers Code as the bases for acceptability of sampled PMTs. The inspectors completed an in-office review of the completed work packages. The sample included the following PMTs:

- Engineering Test Procedure ETP-AE-ST011, FWIV backleakage test, performed on March 30, 2005.

- PMT 05507183/900, Corrective maintenance on the diesel fire pump and CAR 200502390, Diesel fire Pump B failed during retest, April 15, 2005, and CAR 200502391, Diesel fire Pump B problems on April 15, 2005. The inspectors observed a portion of the test from the demineralizer building and performed a walkdown of portions of the fire distribution system.

- PMTs 05100992/920 and 05100992/930, Corrective maintenance on Steam Generator B power-operated atmospheric relief Valve ABPV0002 on April 23, 2005.

- PMT P732441/910, Preventive maintenance on EDG Train B generator brushes on April 20, 2005

- PMTs 732354/910, P698341/900, and P698342/900, Replacement/calibration of field flash relay on EDG Train B on April 19, 2005. The inspectors observed a portion of the test in the diesel generator building.

- PMTs 0400186/910, 0400186/920, and 0400186/ 930, Corrective maintenance on the EDG Train B keep warm pump on April 20, 2005.

- PMT 05103454/910, Code repair of ESW large bore piping, performed on March 26, 2005.

- PMTs P718624/920, 05105227/450, and P718624/910 of KFC02 turbine-driven AFW pump governor valve travel and servo overstroke, on May 19, 2005.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors evaluated licensee activities during two forced outages beginning March 26 and June 17, 2005. The inspectors conducted the review to verify that Union Electric appropriately considered shutdown risk in developing outage schedules, adhered to administrative risk reduction methodologies to control plant configuration, developed mitigation strategies for losses of key safety functions, and adhered to the operating license and Technical Specification requirements that ensured defense-in-depth. The inspectors observed portions of plant startups and outage control of equipment.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed and/or reviewed six risk significant surveillance tests to verify that Union Electric adequately demonstrated component safety functions and to assess operational readiness (six inspection samples). The inspectors verified that testing procedures were properly reviewed and approved with appropriately incorporated acceptance criteria. The inspectors used information in the Technical Specifications, the FSAR, Section XI of the American Society of Mechanical Engineers Code, and licensee procedural requirements as the bases for acceptability of sampled surveillance tests. The samples included the following surveillance tests:

- Surveillance ETP-AE-ST010, Main feedwater isolation valve stroke time tests and Calculation AE-105, Revision 0, and main feedwater isolation valve stroke time correlation, Revision 0, performed on March 31, 2005.

- Surveillance 05507766, Reactor coolant system leak rate test performed on April 7, 2005.

- Surveillance 05507322, Containment cooler Train B flow test performed on April 21, 2005. The inspectors completed an in-office review of the completed surveillance test package.

- Surveillance 05507353, Standby diesel generator Train B, fast start and one-hour load test performed on April 20, 2005. The inspectors completed an in-office review of the completed surveillance test package.

- Surveillance OSP-EN-P001B, "Containment Spray Pump "B" Inservice Test," Revision 26, performed on June 15, 2005. The inspectors observed Union Electric's brief, equipment line-up, and field performance.

- Surveillance OSP-EN-V001B, Containment spray Train B valve operability performed on June 15, 2005. The inspectors observed Union Electric's brief, equipment line-up, and field performance.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors sampled two temporary plant modifications based on the safety significance of the affected systems. The inspectors performed an in-office review and walked down affected plant equipment to verify that the installation was consistent with the modification documents. The inspectors reviewed the configuration control of the modification to verify that the plant documents, such as drawings and procedures, were appropriately updated. The inspectors reviewed postinstallation test results to verify that the actual impact or control of the temporary modifications on permanent plant systems was satisfactory. The inspectors compared temporary modification documentation against the requirements established in Administrative Procedure APA-ZZ-00605, "Temporary System Modifications."

- Worker Protection Assurance 62000. The inspectors reviewed plant Drawing M22SJ01; Procedure ODP-ZZ-00310, "WPA and Caution Tagging;" Chemistry Procedure CTP-SJ-01102, "Auxiliary Building Sample Station Operation;" and CAR 200502328 to determine the cause of an unanticipated lowering of the volume control tank level on April 13, 2005.

- Callaway Plant minor modification of switchyard Breaker MDV85 air receiver drain valve on May 11, 2005, per Request for Resolution 22986. The inspectors reviewed the installation and design package, including the 50.59 screening review.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the 2005 biennial emergency preparedness exercise to determine if the exercise would acceptably test major elements of the emergency plan. The scenario included a fire inside the protected area followed by an unrelated electrical bus fault and failure of the automatic reactor trip system to shut down the reactor. After a successful manual reactor trip, the exercise continued with a stuck open steam generator atmospheric relief valve and a subsequent steam generator tube rupture and fuel cladding failure, resulting in an ongoing radioactive steam release to the environment. Union Electric activated all of their emergency facilities to demonstrate their capability to implement the emergency plan.

The inspectors evaluated exercise performance by focusing on the risk-significant activities of classification, notification, protective action recommendations, and assessment of offsite dose consequences in the simulator control room and the following emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility

The inspectors also assessed personnel recognition of abnormal plant conditions, the transfer of emergency responsibilities between facilities, communications, protection of emergency workers, emergency repair capabilities, and the overall implementation of the emergency plan to verify compliance with the requirements of 10 CFR 50.47(b), 10 CFR 50.54(q), and Appendix E to 10 CFR Part 50.

The inspectors attended postexercise critiques in each of the above emergency response facilities to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended the formal presentation of critique items to plant management. The inspectors reviewed emergency facility logs, emergency notification forms, dose assessment records, and emergency news center press releases to assess licensee performance during the exercise.

The inspectors completed one sample during the inspection.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed one emergency drill during the inspection period (one inspection sample). The inspectors observed the RCS loss of coolant accident with fuel failures drill, on June 15, 2005, to evaluate drill adequacy and to verify that Union Electric implemented proper emergency action level classification and protective action recommendations. The inspectors observed the exercise from the Emergency Operating Facility. The inspectors compared drill observations against Emergency Plan Implementing Procedure EIP-ZZ-00101, "Classification of Events," and Emergency Plan Implementing Procedure EIP-ZZ-00201, "Notifications," to evaluate licensee performance.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety

2OS2 As Low as is Reasonably Achievable (ALARA) Planning and Controls (71121.02)

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining individual and collective radiation exposures ALARA. The inspectors used the requirements in 10 CFR Part 20 and Union Electric's procedures required by Technical Specifications as criteria for determining compliance. The inspectors interviewed licensee personnel and reviewed:

- Current 3-year rolling average collective exposure
- Three work activities from previous work history data which resulted in the highest personnel collective exposures
- Site-specific trends in collective exposures, plant historical data, and source-term measurements
- Site-specific ALARA procedures
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Intended versus actual work activity doses and the reasons for any inconsistencies

- Shielding requests and dose/benefit analyses
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection

Either because the conditions did not exist or an event had not occurred, no opportunities were available to review the following item:

- Effectiveness of self-assessment activities with respect to identifying and addressing repetitive deficiencies or significant individual deficiencies

The inspectors completed 11 of the required 15 samples and one of the optional samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstone: Emergency Preparedness

The inspectors sampled submittals for the performance indicators listed below for the period January 1, 2004, through March 31, 2005. The definitions and guidance of Nuclear Engineering Institute 99-02, “Regulatory Assessment Indicator Guideline,” were used to verify Union Electric’s basis for reporting each data element in order to verify the accuracy of performance indicator data reported during the assessment period.

- Drill and exercise performance
- Emergency response organization participation
- Alert and notification system reliability

The inspectors reviewed a 100 percent sample of drill and exercise scenarios, licensed operator simulator training sessions, notification forms, and attendance and critique records associated with training sessions, drills, and exercises conducted during the

verification period. The inspectors reviewed the qualification, training, and drill participation records for a sample of 10 emergency responders. The inspectors reviewed alert and notification system maintenance records and procedures and a 100 percent sample of siren test results. The inspectors also interviewed licensee personnel that were responsible for collecting and evaluating the performance indicator data. The inspectors completed three samples during the inspection.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Daily Reviews

a. Inspection Scope

The inspectors performed a daily review of items entered into Union Electric's corrective action program. The inspectors performed the screening to identify any repetitive equipment failures or adverse human performance trends for follow-up. The inspectors also attended selected conditions adverse to quality report screenings and daily plant status meetings.

b. Findings

No findings of significance were identified.

.2 Annual Sample Review

Routine Review of Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed detailed in-office reviews and walkdowns of plant equipment related to two significant conditions adverse to quality (two inspection samples). The inspectors reviewed Union Electric's CAR reports to verify that the full extent of the issues was identified, that Union Electric performed appropriate evaluations, and that adequate corrective actions were specified and prioritized. The inspectors evaluated the reports against the requirements of Administrative Procedure APA-ZZ-00500, "Corrective Action Program," and 10 CFR Part 50, Appendix B. The inspectors reviewed the following two samples:

- CAR 2005003476, Inappropriately focused root cause analyses
- CAR 200504163, Unexpected **main steam feedwater isolation signal logic Cabinet** SA075B channel failure

b. Findings

No findings of significance were identified.

.3 Semiannual Trend Review

a. Inspection Scope

The inspectors performed a review of Union Electric's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused on repetitive equipment issues and considered the results of daily CAR screening reviews. The inspectors considered licensee trending efforts and licensee human performance assessment results. The inspector's review nominally considered the 6-month period of January through June 2005. Inspectors reviewed specific CAR items associated with a continued negative trend in human performance events that occurred during the period. The review included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenge lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and maintenance rule assessments. The specific items reviewed are listed in the Documents Reviewed section attached to this report. The inspectors compared and contrasted their results with the results contained in Union Electric's latest quarterly trend reports. Corrective actions associated with a sample of the issues identified in Union Electric's trend report were reviewed for adequacy. The inspectors also reviewed Callaway Plant Quarterly Performance Analysis Report First Quarter. The inspectors used Procedure APA-ZZ-00500, the corrective action program, and 10 CFR Part 50, Appendix B, as the bases for acceptability.

b. Findings and Observations

Licensee-Identified Adverse Trends

There were no findings of significance identified. The inspectors evaluated Union Electric's trending methodology and reviewed two licensee-identified adverse trends:

- Adverse Trend in Human Performance (CAR 200501425)

  Union Electric identified several adverse trends in human performance since 2002. The NRC also identified a substantive crosscutting issue in the area of Human Performance at the 2004 end-of-cycle assessment. This issue was based on seven findings specifically related to personnel errors that occurred in the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones. On May 12, 2005, Union Electric completed a root cause investigation of these and other significant events that occurred during 2004 and 2005. Union Electric identified the following root causes:

< Callaway Plant does not have a clear picture of human performance excellence

< Insufficient supervisor and manager involvement in human performance and inadequate oversight and coaching behaviors

< Ownership of the corrective action program is less than adequate to prevent events

< Inadequate use of change leadership related to training, communication, and roles/responsibilities of change.

Union Electric formulated a corrective action plan at the end of the inspection quarter to address the root causes of the adverse trend in human performance. The inspectors will continue to follow-up the effectiveness of Union Electric's correctives actions addressing the adverse human performance trend. The inspectors discussed an example of continued poor human performance in Section 4OA4 of this report.

- Adverse Trend in Nuclear Safety Culture

  Union Electric completed an independent survey of the Callaway Plant safety culture in June 2003. This survey concluded that the Callaway safety culture was in bottom quartile when compared to industry data. Union Electric implemented corrective actions to improve the plant safety culture. These actions included adding a full time employee concerns coordinator, safety culture workshops for all employees, and safety culture emphasis by station management. Union Electric completed a follow-up survey of the safety culture in June 2005. The follow-up survey concluded that overall plant safety culture had improved to the industry mean. The latest survey indicated that two plant organizations, Radiation Protection and Electrical Maintenance, still lagged the industry mean and needed additional management attention. Union Electric communicated the results of the latest survey to plant employees and provided specific organizational feedback to department heads to address any specific gaps.

NRC-Identified Adverse Trends

The inspectors identified two adverse trends:

The inspectors identified an adverse trend affecting Union Electrics’s fire prevention and mitigation capabilities. Over the past year, the inspections discussed seven fire protection related findings. These included:

- Failure to declare a fire related emergency action level (NCV 05000483/2004004-01)

- Failure to establish a firewatch (NCV 05000483/2004005-02)
- Failure to maintain halon gaseous fire suppression systems (CAR 200500217 and licensee-identified NCV)
- Fire main depressurization event (NCV 05000483/2005002-02)
- Fire brigade below minimum staffing (NCV 05000483/2005002-03)
- Failure to maintain fire Areas A-1 and T-2 free of fire combustibles (CAR's 200503417 and 200503733)
- Door violations (NCV 05000483/2004005-01 and NCV 05000483/2005003-02)

The inspectors also identified an adverse trend of less than adequate root cause analyses. Several of Union Electric's root cause analyses were too narrowly focused to identify conditions that crossed departmental boundaries and that involved previous operational experience (CAR 2005003476). Examples included:

- Reactor trip root cause analysis did not identify operational experience as an organizational issue, January 19, 2005
- Fire main depressurization root cause analysis revealed cross departmental configuration control issues and poor prejob brief aspects similar to other recent event causal factors that were not seen as root causes or organizational deficiencies, March 3, 2005
- AFW actuation and reactor trip signal root cause analysis originally pinpointed an inadequate engineering test procedure as not being written for the actual mode and plant conditions that were present on that day. The root cause evaluation did not strongly question why the operators were challenged with the inadequate procedure, March 29, 2005.

.4 Cross-Reference to Problem Identification and Resolution Findings Documented Elsewhere

a. Inspection Scope

Section 2OS2 evaluated the effectiveness of Union Electric's problem identification and resolution processes regarding exposure tracking, higher than planned exposure levels, and radiation worker practices. The inspectors reviewed the corrective action documents listed in the attachment against Union Electric's problem identification and resolution program requirements.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

1. (Closed) License Event Report (LER) 05000483/2005-002-00: Completion of Technical Specification Required Shutdown

   On March 26, 2005, Union Electric initiated a normal plant shutdown required by Technical Specifications due to an inoperable ESW Train B piping system. A section of 30-inch diameter ESW pump discharge pipe located between the ESW pump strainer and discharge isolation valve had corroded to a wall thickness below code allowable thickness. Union Electric documented the event in CAR 200501838. The inspectors reviewed the LER and no additional findings of significance were identified. This LER is closed.

2. (Closed) LER 05000483/2005-003-00: Reactor Protection System and AFW Actuation due to Deficient Test Procedure

   A reactor trip occurred during the engineering test procedure to determine backleakage associated with Steam Generator C FWIV. This event, Union Electric's follow-up actions, and inspectors' findings were described in Section 1R14 of this report. Union Electric documented the event in CAR 200501949. The inspectors reviewed the LER and no additional findings of significance were identified. This LER is closed.

4OA4 Crosscutting Aspects of Findings (71152)

Section 1R14 documents one finding with human performance crosscutting aspects associated with an inadequate procedure and poor crew decision making which resulted in an unplanned reactor trip signal and AFW initiation (NCV 05000483/2005003-02).

Section 1R05 documents one finding with problem identification and resolution crosscutting aspects which involved Union Electric's failure to maintain the integrity of the fire confinement function of a 3-hour fire door. Union Electric had several prior opportunities to self-identify the degraded door, and previous corrective actions were not effective to prevent recurrence (NCV 05000483/2005003-01).

In addition to a daily review per Manual Chapter 2515, the inspectors provided a review of licensee CAR 200501425 associated with an identified human performance substantive crosscutting issue aspect issued with the March 2, 2005, end-of-cycle letter (Section 4OA2).

4OA5 Other Activities

Temporary Instruction (TI) 2515/163, Operational Readiness of Offsite Power Systems

a. Inspection Scope

The inspectors collected data to assess the operational readiness of the offsite power systems from LERs, corrective action documents, and procedures as required by

TI 2515/163. The data was gathered in accordance with NRC requirements, such as Appendix A of 10 CFR Part 50, General Design Criterion 17; Criterion XVI of Appendix B of 10 CFR Part 50, plant Technical Specifications for offsite power systems; 10 CFR 50.63; and 10 CFR 50.65 (a)(4). Specifically, licensee procedures were reviewed to ensure they provided action steps to address the areas of offsite power operability, maintenance rule risk assessment, and station blackout recovery. Documents reviewed for this TI are listed in the Supplemental Information attachment.

b. Findings

No findings of significance were identified. Based on the inspection, no immediate operability issues were identified. In accordance with TI 2515/163 reporting requirements, the inspectors provided the required data to headquarters staff for further analysis.

4OA6 Meetings, including Exit

On April 28, 2005, the senior health physics inspector presented inspection results to Mr. C. Naslund, Senior Vice President and Chief Nuclear Officer, and other members of his staff who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On May 5, 2005, the senior emergency preparedness inspector discussed inspection findings with Mr. C. Naslund, Senior Vice President and Chief Nuclear Officer, and other members of Union Electric's staff. The inspector verified that no proprietary information was provided during the inspection.

On June 27, 2005, the resident inspectors presented inspection results to Mr. C. Naslund, Senior Vice President and Chief Nuclear Officer, and other members of his staff who acknowledged the findings. The inspectors confirmed that proprietary information was provided and returned during the inspection.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

W. Bevard, Evaluator, Protective Services
K. Bruckerhoff, Supervisor, Emergency Preparedness
S. Crawford, Evaluator, Protective Services
R. Farnam, General Supervisor, Radiation Protection
K. Gilliam, ALARA Coordinator, Radiation Protection
L. Graessle, Superintendent, Protective Services
M. Hale, Superintendent, Radiation Protection
E. Henson, Specialist, Regulatory Affairs
C. Naslund, Senior Vice President and Chief Nuclear Officer
G. Pendergraff, Evaluator, Protective Services
S. Petzel, Engineer, Regulatory Affairs
L. Thibault, General Plant Manager
D. Trokey, Evaluator, Protective Services
N. Turner, Evaluator, Protective Services
K. Young, Manager, Regulatory Affairs

NRC

M. Frato, Security Inspector
B. Tharakan, Health Physics Inspector

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

05000483/2005003-01	NCV	Failure to maintain the integrity of an auxiliary building fire door (Section 1R05)
05000483/2005003-02	NCV	Inadequate control of steam generator levels during FWIV seat leakage testing (Section 1R14)

Closed

05000483/2005-002-00	LER	Completion of Technical Specification Required Shutdown (Section 4OA3)
05000483/2005-003-00	LER	Reactor Protection System and AFW Actuation due to Deficient Test Procedure (Section 4OA3)

DOCUMENTS REVIEWED

Procedures

APA-ZZ-00340, Surveillance Program Administration, Revision 24
APA-ZZ-0100B, Preparation for Job Briefs, Revision 0
APA-ZZ-0322 Work Week Schedule and Execution
APA-ZZ-01000, Callaway Plant Radiation Protection Program, Revision 18
APA-ZZ-01001, Callaway Plant ALARA Program, Revision 11
ECA-0.0 Loss of Offsite Power ,Revision 5
EDP-ZZ-01129, Callaway Plant Risk Assessment, Revision 6
EDP-ZZ-1129 Callaway Plant Risk Assessment
EIP-ZZ-00102, Emergency Implementing Actions, Revision 34
EIP-ZZ-00201, Notifications, Revision 41
EIP-ZZ-00200, Augmentation of the Emergency Organization, Revision 11
EIP-ZZ-00212, Protective Action Recommendations, Revision 21
EIP-ZZ-00220, Emergency Team Formation, Revision 16
EIP-ZZ-00230, Accountability, Revision 27
EIP-ZZ-00240, TSC Operations, Revision 34
EIP-ZZ-01211, (MAGNEM) Management Action Guides For Nuclear Emergencies, Revision 24
EIP-ZZ-A0001, Emergency Response Organization, Revision 8
EIP-ZZ-A0066, RERP Training Program, Revision 11
EIP-ZZ-C0010, Emergency Operations Facility Operations, Revision 30
EIP-ZZ-PR020, Activation and Operation of the Joint Public Information Center, Revision 20
EIP-ZZ-SK001, Response to Security Events, Revision 1
EOP Addendum 7 - Restoring Offsite Power
GDP-ZZ-00800, Independent Technical Review Qualification and Responsibilities, Revision 1
HDP-ZZ-01200, Radiation Work Permits, Revision 4
HTP-ZZ-01101, Administrative Controls for Radiation Shielding, Revision 10
KOA-ZZ-A0020, Emergency Response Facility Operability/Habitability, Revision 2
KSP-ZZ-00110, Siren Alerting System Testing, Revision 8
KSP-ZZ-00111, Weekly Siren Quiet Testing, Revision 0
ODP-ZZ-00001, Operations Department - Code of Conduct, including Addendum 9, Revision 0
ODP-ZZ-00003, Shift Relief and Turnover, Revision 22
OSP-EF-V001B, ESW Train A Valve Operability, Revision 29
OSP-AB-V002A, Steam Generator Atmospheric PORV Inservice test, Revision 24
OSP-EF-00001, Essential Service Water Valve Lineup Verification, Revision 5
OSP-BB-00009, Reactor Coolant System Inventory Balance, Revision 12
OSP-KA-V0003, Nitrogen Accumulator Leak Rate Test, Revision 12
OSP-EF-V001A, ESW Train A Valve Operability, Revision 27
OSP-AL-V001C, TD AFW Valve Operability, Revision 29
OSP-EN-P001B, Containment Spray Pump B Inservice Test, Revision 26
OSP-EN-V001B, Train B Containment Spray Valve Operability, Revision 16
OSP-NB-00001, Class 1E Electrical Source Verification, Revision 20
OSP-SE-00004, NIS Power Range Heat Balance, Revision 21
OTA-RL-RK055, Annunciator Response Procedure, Revision 15
OTA-RL-RK054, Annunciator Response Procedure, Revision 10
OTN-EF-00001, Essential Service Water System, Revision 27
OTN-NE-00001A, Standby Diesel Generator Train A, Revision 13

OTS-EF-00003, Essential Service Water System Header Draining, Revision 7
PDP-ZZ-00011, Post Maintenance Testing
RRA-ZZ-00001, NRC Performance Indicator Program, Revision 1
T/S 3.8.1, AC Sources - Operating, and 3.8.2, AC Sources – Shutdown
EN Containment Spray Performance Monitoring Report, June 21, 2005
NE106/KJ122 Troubleshooting Plan
Nuclear Division Policies 0-Workaround-01, Revision 1

Drawings

E-U3 EF13, UHS Sump Heaters, Revision 5
E-U3 EF05, UHS Tower Bypass Valves, Revision 15
J-U2 EF06B, Cooling Tower Fans, Revision 3
J-1065-00014, Main Steam Feedwater Isolation Signal Cabinet Schematic
M-U2 GD01, Essential Service Water Supply Fans, Revision 10
M-U22 EF01, Essential Service Water Piping and Instrumentation Drawing, Revision 51
M-22 EF01, Essential Service Water System
M-22 GM01(Q), Diesel Generators Building HVAC, Revision 2
M-22 EF02, Essential Service Water System
M-22 EN01(Q), Containment Spray System, Revision 9
M-22 KJ01, Standby Diesel Generator, Revision 18
M-22 KJ02, Standby Diesel Generator, Revision 18
M-22 KJ03, Standby Diesel Generator, Revision 18
M-22 KJ04, Standby Diesel Generator, Revision 17
M-22 KJ05, Standby Diesel Generator, Revision 21
M-22 KJ06, Standby Diesel Generator, Revision 17
Work Request 05510246, PK01 SWBD 125 VDC Bus, June 14, 2005

Audits and Self-Assessments

Quality Assurance Audit of Radiation Protection AP05-001, March 11, 2005

Quality Assurance Surveillance SP05-002, Assess progress made in addressing previous corrective action program findings by quality assurance and INPO and timeliness of root cause evaluations, CAR closures, and responses to maintenance rule CARs, March 10, 2005

Simple Surveillance Report AP05-021, June 2, 2005

AP05-002, Quality assurance audit of operations

SP05-004, Surveillance of the emergency preparedness performance indicators and the March 16, 2005, emergency preparedness pre-exercise

SP05-005, Assure appropriate identification of deficiencies, corrections, and maintenance of fire doors is occurring

SP05-009, Assess steam generator blowdown Demineralizers A & B flush after being filled with new resin

SP05-011, Replacement of essential service water, Train B piping

SP05-013, Assess the adequacy of plant operation and organizational support during activities associated with essential service water Train B pipe repair

SP05-016, Assess actions taken in response to conduct of engineering regarding use of operating experience

SP05-017, Assess the hydrogen leakage tam and the troubleshooting process

Event Review Team Meeting Summary after Emergency Diesel Generator A was declared inoperable due to speed/frequency problems, May 4, 2005

Event Review Team Meeting Summary after a near miss due to setting up an instrumentation and control test without meeting initial conditions, April 19, 2005

Event Review Team Meeting Summary after a reactor trip caused from Steam Generator C lo lo level, March 29, 2005

Callaway Action Requests

200501092	200502742	200503733	200408458
200501372	200503181	200504070	200409399
200501425	200503417	200504086	200500757
200501949	200503431	200504163	200500814
200502328	200503441	200504165	
200502576	200503476		

Miscellaneous

Exercise and Drill Critiques: February 25, 2004; September 1, 2004; November 3, 2004; March 16, 2005

Rapid Responder Drill Reports: January and February 2004 (Cycle 04-01); September and October 2004 (Cycle 04-04); January and February 2005 (Cycle 05-01)

Shielding Requests

PS-08, PS–10

Radiation Work Permits

S720065, 502620HIC, 502620MOP, 5102189, 5505182

LIST OF ACRONYMS

AFW	auxiliary feedwater
ALARA	as low as is reasonably achievable

CARs	Callaway Action Requests
CS	containment spray
EDG	emergency diesel generator
ESW	essential service water
FSAR	Final Safety Analysis Report
FWIV	feedwater isolation valve
IEEE	Institute of Electrical and Electronic Engineers
LER	licensee event report
NCV	noncited violation
PMTs	postmaintenance tests
RCS	reactor coolant system
TI	temporary instruction