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

October 15, 2004

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

SUBJECT: CALLAWAY PLANT - NRC SAFETY SYSTEM DESIGN AND PERFORMANCE CAPABILITY INSPECTION REPORT 05000483/2004-008

Dear Mr. Randolph:

On September 17, 2004, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Callaway Plant. The enclosed Safety System Design and Performance Capability report documents the inspection findings which were discussed on September 16, 2004, and on September 28, 2004, with C. Naslund and other members of your staff.

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

This report documents one finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements; however, because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating the finding as a noncited violation consistent with Section IV.A of the NRC Enforcement Policy. If you contest this noncited violation, 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 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at the Callaway Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Jeff Clark, P. E., Chief
Engineering Branch
Division of Reactor Safety

Docket: 50-483
License: NPF-30

Enclosure:
Inspection Report 05000483/2004-008
w/Attachment Supplemental Information

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-483
License:	NPF-30
Report No.:	05000483/2004-008
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	August 30 through September 28, 2004
Team Leader	N. L. Salgado, Senior Resident Inspector Projects Branch D
Inspectors:	J. P. Adams, Reactor Inspector, Engineering Branch L. E. Ellershaw, Senior Reactor Inspector, Engineering Branch B. W. Henderson, Reactor Inspector, Engineering Branch J. M. Mateychick, Reactor Inspector, Engineering Branch W. M. McNeill, Reactor Inspector, Engineering Branch
Approved By:	Jeff Clark, P. E., Chief Engineering Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000483/2004-008; August 30 through September 17, 2004; Callaway Plant; Evaluations of Changes, Tests, or Experiments, and Safety System Design and Performance Capability.

The report covered a 2-week period of inspection by one senior resident inspector, one senior reactor inspector, and four reactor inspectors. The inspection identified one Green noncited violation. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) and determined 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’s 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.

NRC-Identified and Self Revealing Findings

Cornerstone: Mitigating Systems

- Green. A noncited violation of 10 CFR Part 50, Appendix B, Criteria XI, “Test Control,” was identified for the failure to establish a test procedure with appropriate acceptance criteria to verify the proper operation of the auxiliary feedwater system automatic recirculation control valves. This issue was entered into the corrective action program as Callaway Action Request 200407321.

  The finding is greater than minor because it affected the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding is associated with the cornerstone attribute of procedure quality. Using the Phase 1 worksheet in Manual Chapter 0609, “Significance Determination Process,” this finding is determined to be of every low safety significance because there was no actual loss of a safety function (Section 1R21).

REPORT DETAILS

1. REACTOR SAFETY

Introduction

The NRC conducted an inspection to verify that licensee personnel adequately preserved the facility safety system design and performance capability and that licensee personnel preserved the initial design in subsequent modifications of the systems selected for review. The scope of the review also included any necessary nonsafety-related structures, systems, and components that provided functions to support safety functions. This inspection also reviewed the licensee's programs and methods for monitoring the capability of the selected systems to perform the current design basis functions. This inspection verified aspects of the initiating events, mitigating systems, and barrier cornerstones.

The licensee personnel developed the probabilistic risk assessment model for the Callaway Plant based on the capability of the as-built safety systems to perform their intended safety functions successfully. The team determined the area and scope of the inspection by reviewing the licensee's probabilistic risk analysis models to identify the most risk significant systems, structures, and components. The team established this according to their ranking and potential contribution to dominant accident sequences and/or initiators. The team also used a deterministic approach in the selection process by considering recent inspection history, recent problem area history, and all modifications developed and implemented.

1R02 Evaluations of Changes, Tests, or Experiments (71111.02)

a. Inspection Scope

The minimum sample size for this procedure is 5 evaluations and 10 screenings. The team reviewed 6 licensee-performed 10 CFR 50.59 evaluations to verify that licensee personnel had appropriately considered the conditions under which they may make changes to the facility or procedures or conduct tests or experiments without prior NRC approval. These evaluations had been performed since the last NRC inspection of 10 CFR 50.59 activities.

The team reviewed 14 licensee-performed 10 CFR 50.59 screenings in which licensee personnel determined that evaluations were not required to ensure that exclusion of a full evaluation was consistent with the requirements of 10 CFR 50.59. Additionally, the team reviewed 7 licensee-performed applicability determinations in which licensee personnel determined that neither screenings nor evaluations were required to ensure consistency with the requirements of 10 CFR 50.59 regarding exclusion of screenings and evaluations.

The team reviewed and evaluated the most recent licensee 10 CFR 50.59 program self assessment and a sample of four corrective action documents written since the last NRC 10 CFR 50.59 inspection to determine whether licensee personnel conducted sufficient in-depth analyses of their program to allow for the identification and subsequent resolution of problems or deficiencies.

b. Findings

No findings of significance were identified.

1R21 Safety System Design and Performance Capability (71111.21)

.1 Design, Conditions, and Capability

a. Inspection Scope

The minimum sample size for this procedure is one risk-significant system for mitigating an accident. The team completed the required sample size by reviewing the auxiliary feedwater system. The primary review prompted parallel review and examination of support systems, such as, instrument air, and related structures and components.

The team assessed the adequacy of calculations, analyses, engineering processes, and engineering and operating practices that licensee personnel used for the selected safety system and the necessary support systems during normal, abnormal, and accident conditions. Acceptance criteria used by the team included NRC regulations, the technical specifications, applicable sections of the Updated Final Safety Analysis Report, applicable industry codes and standards, and industry initiatives implemented by the licensee's programs.

The team inspected the following attributes of the auxiliary feedwater system: (1) process medium (water, steam, air, electrical signal), (2) energy sources, (3) control systems, and (4) equipment protection. The team examined the procedural instructions to verify that instructions were consistent with actions required to meet, prevent, and/or mitigate design basis accidents. The team also considered requirements and commitments identified in the Updated Final Safety Analysis Report, technical specifications, design basis documents, and plant drawings. In conjunction with the primary review, a parallel review and examination of support systems, such as, instrument air, and related structures and components was also conducted.

The team performed walkdowns of accessible portions of the auxiliary feedwater system. The team focused on the installation, configuration, and visible material condition of equipment and components. During the walkdowns, the team assessed:

- The placement of protective barriers and systems,
- The susceptibility to flooding, fire, or environmental conditions,
- The physical separation of trains and the provisions for seismic concerns,
- Accessibility and lighting for any required operator action,
- The material condition and preservation of systems and equipment, and

- The conformance of the currently-installed system configuration to the design and licensing bases.

The team reviewed the current as-built instrument and control, electrical, and mechanical design of the selected systems and support systems. These reviews included an examination of design assumptions, calculations, environmental qualifications, required system thermal-hydraulic performance, electrical power system performance, control logic, and instrument setpoints and uncertainties. The team assessed the adequacy of calculations, analyses, test procedures, and operating procedures that licensee personnel used during normal and accident conditions.

The team also reviewed the adequacy of the original system design to perform the design basis functions during normal, accident and post-accident conditions. The review included: design basis documents; specifications; reliability calculations; instrument uncertainty/setpoint calculations; uncertainty calculations related to emergency operating instruction action levels; and schematic diagrams. The adequacy of the design and maintenance of selected support systems was also reviewed.

The team reviewed programs and procedures for testing and inspecting selected components for the auxiliary feedwater system and support systems. The review included the results of surveillance tests required by the technical specifications and a selective review of inservice tests.

b. Findings

Introduction. The team reviewed the periodic testing procedures for the auxiliary feedwater system to verify that the capabilities of the systems were verified periodically. The team also reviewed systems' operation by conducting system walkdowns; reviewing normal, abnormal, and emergency operating procedures; and reviewing the Updated Final Safety Analysis Reports, technical specifications, design calculations and drawings.

The team identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criteria XI, "Test Control," for the failure to establish a test procedure with appropriate acceptance criteria to verify the proper operation of the auxiliary feedwater system automatic recirculation control valves.

Description. In 2004, during Refueling Outage RFO13, the licensee implemented two modifications which impacted the ability of the auxiliary feedwater system to provide sufficient flow to the steam generators following a loss of main feedwater. The feedwater isolation valves' actuators were replaced with actuators which use the system fluid as their pressure source for closing the valves versus the previous hydraulically operated actuators. The feedwater isolation valve actuator replacement introduced the potential for failure of associated solenoid valves to divert some auxiliary feedwater flow to the condenser rather than to steam generators.

Automatic recirculation control valves were installed in the discharge piping of the two motor driven auxiliary feedwater pumps replacing normally open pump minimum flow

recirculation lines with restricting orifices and the pump discharge check valves. The automatic recirculation control valves are three ported valves which form a tee in the system piping. The outlet side of the main flow path (6 inch) and the branch connection to the pump recirculation line (2 inch) both contain a spring style plug check valve. With little or no system flow to the steam generators, the recirculation line check valve opens to provide the minimum required pump flow. As the process flow to the steam generators increases, the recirculation flow will modulate to zero at a predetermined system flow rate. The automatic recirculation control is provided by internal mechanical linkages connecting the two check valve plugs.

The modifications were performed to 1) increase the minimum flow recirculated to the condensate storage tank during pump testing and other low flow operations; 2) reduce vibration in the system piping during pump operation; and 3) make additional flow to the steam generators available by isolating the recirculation flow to the condensate storage tank as flow to the steam generators was established. The additional flow provided by the isolation of the recirculation flow was necessary for sufficient flow to the steam generators in the case of a failure of solenoid valves associated with the feedwater isolation valve actuators.

The ability of the automatic recirculation control valves to isolate the recirculation flow is a design feature, which is required in the failure analysis of the replacement feedwater isolation valve actuators. The isolation function of the automatic recirculation control valves can only be confirmed during system testing which provides flow to the steam generators. Operations Surveillance Procedure OSP-AL-V0002, “Auxiliary Feedwater Valve Operability”, Revision 017, records the recirculation flow while feeding the steam generators, but no acceptance criterion was specified.

Analysis. The team determined that the finding's significance was greater than minor because it affected the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding is associated with the cornerstone attribute of procedure quality. Using the Phase 1 Significance Determination Process, as described in Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," this finding is determined it to be of very low safety significance because there was no actual loss of a safety function.

Enforcement. 10 CFR Part 50, Appendix B, Criteria XI, "Test Control," states, in part, that “A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures, which incorporate the requirements and acceptance limits contained in applicable design documents.” Contrary to the above, the licensee failed to incorporate into the auxiliary feedwater system test procedures any requirement to periodically verify the automatic recirculation flow isolation function of the automatic recirculation control valves with defined acceptance criteria. Because the failure to test this feature is of very low safety significance and has been entered into the corrective action program as Callaway Action Request 200407321, this violation in being treated as a noncited violation, consistent

with Section VI.A of the NRC Enforcement Policy: NCV 05000483/200408-01, Failure to Test Automatic Recirculation Control Valves Recirculation Isolation Feature.

.2 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed a sample of problems associated with the auxiliary feedwater system that were identified by licensee personnel in the corrective action program to evaluate the effectiveness of corrective actions related to design issues and aging hardware. The sample included open and closed corrective action requests for the past 2 years and are listed in the attachment to this report. Inspection Procedure 71152, "Identification and Resolution of Problems," was used as guidance to perform this part of the inspection. Older corrective action requests that were identified while performing other areas of inspection were also reviewed.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meetings, Including Exit

On September 16, 2004, and on September 28, 2004 (by telephone) the team leader presented the inspection results to Mr. C. Naslund, Vice-President, and other members of his staff who acknowledged the findings. The team confirmed that proprietary information was not provided or examined during this inspection.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

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D. Dumbacher, Resident Inspector

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

05000483/2004008-01	NCV	Failure to Test Automatic Recirculation Control Valves Recirculation Isolation Feature (Section 1R21)

LIST OF DOCUMENTS REVIEWED

Calculations:

A170.0166/C090, “Instrument Uncertainity and Setpoint Calculation for Motor Driven Auxiliary Feedwater Pump Flow Control Valve Flow Controllers,” Revision 000

AL-16, “AFW Flow,” Revision 0

AL-16, “AFW Flow,” Revision 1

AL-16, “AFW Flow,” Revision 2

AL-16, Addenda 1, “Recirculation Flow,” Revision 3

AL-16, Addenda 3, “MDAFW Acceptance Criteria,” Revision 0

AL-17, “Main Steam Line Break - AFW Flow Model using Pipe 2000,” Revision 001

AL-30, “Modeling of the ‘A’ MDAFW,” Revision 000

AL-30, “Modeling of the ‘A’ MDAFW,” Revision 001

AL-30, “Pump Acceptance Criteria,” Revision 002

AL-30, Addenda 1, “Pump Acceptance Criteria,” Revision 002

Al-35, “SGTR Overfill - AFW Flow Model using Pipe 2000,” Revision 000

AL-197, Addenda 2, “Pipe Stress Updates as Result of Configuration Changes from Modification MP-02-1018,” Revision 000

AL-197, Addenda 6, “Pipe Stress Updates as Result of Configuration Changes from Modification MP-02-1018,” Revision 000

JUSA06, “Determination of the Instrument Loop Uncertainty for Loops 37,38 and 39,” Revision 1

JUSA06A, “Determination of the Safety Setpoint for Loops 37,38 and 39,” Revision 2

JUSA06, “Determination of the Instrument Loop Uncertainty for Loops 37,38 and 39,” Revision 1, Addend 1

JUSA06A, “Determination of the Safety Setpoint for Loops 37,38 and 39,” Revision 2, Addend 1

AL-09, “Minimum Readable Auxiliary Feed Flow for ECA-2-1," Revision 0

AL-18, “Verification of Adequate Water Inventory for TDAFP Startup Without CST Availability and LOOP,” Revision 0

AL-22, “AFW-CST Level Setpoints,” Revision 2

AL-24, “Determine the Effect of Dissolved Nitrogen on the NPSHa for Al Pumps,” Revision 0

AL-24, , “Calculate the NPSHa at the Max CST Level,”Addendum 2, Revision 0

AL-27, “Smart-valve Flow Diversion Allowed for Feed Line Break Analysis,” Revision 0

AL-29, “The Turbine Driven Auxiliary Feedwater Pump Performance Through the Feedline Break Transient,” Revision 0

AL-36, “Auxiliary Feedwater Flow Rates for Most Accident Scenarios,” Revision 0

AP-04, “Find the Minimum Cst Level That Will Ensure That the NPSH Requirements for the Auxiliary Feedwater Pumps Is Maintained,” Revision 0

BO-04, “Condensate Storage Tank Auxiliary Feedwater Inventory for Station Blackout,” Revision 1

BO-05, “Station Blackout Room Temperature Analysis,” Revision 1

Ef-37,“Uhs Volumes and Tech Spec Level,” Revision 0

M-AP-02, “Condensate Storage Tank Capacity Required for Extended Hot Standby,”Addendum 2, Revision 0

M-EF-53, “UHS Pond Thermal Performance - Max Heat Transfer Case and Final Report,” Revision 1

M-GF-01, “Cooling Load - Motor Driven Auxiliary Feedwater Pump Rooms,” Revision 0

AL-38, “ALHV0006 Capability and Margin Calculation,” Revision 0

KA-35, “Past Operabililty of TKA04,” Revision 0

KA-32, “Determine the Maximum Leakage Rate of Nitrogen From Accumulators TKA02, 03, 04, and 05 Allowed to Maintain Valve Operation for 5 Hours, Starting With the Minimum Tech Spec Pressure of 370 PSIA,” Addenda 1, Revision 0

M-FL-13, “Aux Bldg Area 5 Flooding,” Revision 0

M-KA-314, “Back-up Gas Supply System,” Addenda 1 & 2, Revision 0

Corrective Action Requests

200406521	200305221	200200965	200401167	200404888	200402762
200406879	200400791	200207880	200403054	200405582	200402810
200406830	200401031	200208352	200403476	200403569	200404090
200407196	200401888	200300610	200406830	200206908	200404652
200407201	200306671	200400009	200303427	200207570	200404954
200407231	199800531	200400256	200400497	200400311	200404955
200301869	200105835	200401780	200403570	200401943	200405270
200303710	200107423	200401076			

Design Basis Documents

UFSAR, Revision 13

UFSAR, “Compressed Air System,” Section 9.3.1, Revision OL-13e

UFSAR, “Auxiliary Feedwater System,” 10.4.9, Revision OL-13i

UFSAR, “Station Blackout,” Section Appendix 8.3A, Revision OL-13

UFSAR Change Notices 97-061 and 99-008

Requests for Resolutions

RFR 14020, Revision A - E	RFR 21751, Revision A	RFR 23448, Revision A
RFR 07052, Revision A	RFR 13786, Revision C	RFR 4780, Revision G
RFR 19717, Revision C	RFR 22615 Revision A	RFR 4780, Revision F
RFR 21864, Revision A		

Drawings

E-2G8900, “Grounding Notes Symbols and Details,” Revision 14

M-25-AL05, “Hanger Location Dwg. Auxiliary Feedwater Pumps Recirculation Piping,” Revision 5, Sequence 1

M-22AL01(Q), “Piping & Instrumentation Diagram Auxiliary Feedwater System,” Revision 31

E-2L1303, “Lighting, Grounding & Communications Auxiliary & Reactor Buildings Plan EL. 2000'-1",” Revision 31

GM-AB2000N-8X11,”Callaway Plant Auxiliary Building Grid Map Floor Elevation 2000'-0",” Revision 8

M-22AP01, “Piping and Instrumentation Diagram Condensate Storage and Transfer System,” Revision 21

M-22AB04, “Steam Generators Secondary Side Composite Loop 1,” Revision 9

M-22AB05, “Steam Generators Secondary Side Composite Loop 2,” Revision 4

M-22AB06, “Steam Generators Secondary Side Composite Loop 3,” Revision 3

M-22AB07, “Steam Generators Secondary Side Composite Loop 4,” Revision 3

M-22AB02(Q), “Piping and Instrumentation Diagram Main Steam System,” Revision 13

M-22FC02(Q), “Piping and Instrumentation Diagram Auxiliary Turbines Auxiliary Feedwater Pump Turbine,” Revision 19

M-0H1251(Q),“Heating Ventilating & Air Conditioning - Auxiliary Building El. 1974'-0", 1989' 0" & 2000' - 0", Area 5,” Revision 7

M-2G022,“Equipment Locations - Reactor and Auxiliary Buildings Plan Ground Floor El 2000' 0", Revision 51

M-2G023, “Equipment Locations - Reactor and Auxiliary Buildings Plan El. 2026' 0",” Revision 37

M-2H1451(Q),“Heating Ventilating & Air Conditioning - Auxiliary Building El. 2013' & 2026'-0" Area 5,” Revision 4

M-22GF01(Q), “Piping & Instrumentation Diagram - Miscellaneous Buildings HVAC,” Revision 8

M - 109-00012,“Details - Condensate Storage Tank,” Revision 7

M - 109-00010,“Condensate Storage Tank,” Revision 11

J-104-00176, “Logic Block Diagram Emergency Safeguards Actuation System,” Revision 13

M-22AE02(Q), “Piping and Instrumentation Diagram Feedwater System,” Revision 23

M-22AL01(Q), “Piping and Instrumentation Diagram Auxiliary Feedwater System,” Revision 31

E-23AB01 (Q), “Schematic Diagram - Main Steam Supply Valve To Turbine Driven Aux Feedwater Pump,” Revision 8

E-23AL01A (Q), “Schematic Diagram - Motor Driven Auxiliary Feedwater Pump A,” Revision 6

E-23AL02A (Q), “Schematic Diagram - Motor Operated Valves,” Revision 7

E-23AL04A (Q), “Schematic Diagram - Supply From Ess Serv Water System,” Revision 9

E-23AL05B (Q), “Aux Feedwater Pumps, Discharged Control - Air Oper. Valve,” Revision 3

E-U3EF01 (Q), “Schematic Diagram - Essential Service Water Pump A,” Revision 28

W-23NG01 (Q), “Low Voltage System Class IE 480 V Three Line Meter and Relay Diagram,” Revision 3

J-02AL03 (Q), “Auxiliary Feedwater Pumps Disc. Control Valve Indications And Lights,” Revision 5

J-104-00176, “Logic Block Diagram - ESFAS,” Revision 13

J-104-00240, “Logic Block Diagram - Load Shedding & Emergency Load Sequencing System (LSELS),” Revision 15

M-U2EF01 (Q), “Piping And Instrumentation Diagram - Essential Service Water System,” Revision 50

M-22EF01 (Q), “Piping And Instrumentation Diagram - Essential Service Water System,” Revision 46

M-22EF02 (Q), “Piping And Instrumentation Diagram - Essential Service Water System,” Revision 51

M-22KA05 (Q), “Piping And Instrumentation Diagram - Compressed Air System,” Revision 13

M-22LE01, “Piping And Instrumentation Diagram - Turb. Bldg. And Aux. Feedwater Pump Room Oily Waste System,” Revision 8

M-2P1151, “Drainage Systems (LE) Auxiliary Building EL. 1974'-0",EL. 1989'-0" & 2000'-0" Area 5," Revision 0

Miscellaneous

10 CFR 50.59 Resource Manual, Revision 0 (a document developed and maintained by the Utilities Service Alliance which has been adopted for use at the Callaway Plant)

10 CFR 50.59 Summary Report dated May 23, 2003, addresses activities between July 1, 2001 and December 31, 2002 (the next Summary Report is due out December 2004)

Document J-1065-00042, “Commercial Grade Software Dedication Report CGDR 9400700/1, For Class 1E Qualified Main Steam and Feedwater Isolation Valve System,” Revision 0

Amendment 159 to Facility Operating License NPF-30 for Callaway Plant, Unit 1, and Applicable Safety Evaluation

CMP 00-1099, “FWIV Actuator Replacement,” Revision A

CMP 02-1018, “Installation of MDAFP’s Discharge Automatic Control Check Valve,” Revision A

CMP 97-1028, “Revise Limit Switch Settings on the Limitorque Operator for FCHV0312,” Revision A

Specification J-1070, “Technical Specification For Terry Turbine Controls Upgrade, Revision 1

Letter ULNRC-04592, “Proposed Revision to Technical Specification 1.1, “Definitions”; Technical Specification 3.7.3 “Main Feedwater Isolation Valves (MFWIVs)”; and Steam Generator Tube Rupture With Overfill Re-analysis, Dated 6/27/2003

Letter ULNRC-04928, “Responses to Requests for Additional Information Proposed Revision to Technical Specification 1.1, “Definitions”; Technical Specification 3.7.3 “Main Feedwater Isolation Valves (MFWIVs)”; and Steam Generator Tube Rupture With Overfill Re-analysis” Dated 12/12/2003

Performance Monitoring Report: AL Auxiliary Feedwater (14 report packages)

10466-M-00GF(Q), “Miscellaneous Building Ventilation System SNUPPS,” Revision 5

T61.0110.6/T61.016C.6, “Auxiliary Feedwater - AL, Revision

Specification 10466-E-018(Q), “Technical Specification For Motor Control Centers For The Standardized Nuclear Unit Power Plant System,” Revision 12

Inservice Testing Program, Revision 21

Inservice Testing Data (electronic data base) for the following equipment:

ABHV0048 & 0049	ALHV0007	ALV0029	ALV0194
AEFV0042	ALHV0030	ALV0033	FCV0001 & 0002
AEV0122	ALHV0034	ALV0033	FCV0024 & 0025
AEV0125 & 0126	ALV0003	ALV0036	
ALHV0005	ALV0006	ALV0062	

Preventative Maintenance:

MTE-ZZ-QA013, “ MOVATS UDS Testing of Torque Controlled Limitorque Motor Operated Rising Stem Valves,” Revision 3.

MPM-ZZ-QA001, “Limitorque Actuator Inspection and Lubrication,” Revision 28

MDP-ZZ-P0001, “Non-Live Load Packing,” Revision 11

Preventive Maintenance Basis: Motor Operated Valves MOV-1

Preventive Maintenance Basis: Air Operated Valves AOV-1

Preventive Maintenance Background Information: Motor Operated Valves

Procedures

ODP-ZZ-00004, “Locked Component Control,” Revision 028

APA-ZZ-00143, “10CFR50.59 Reviews,” Revision 000

APA-ZZ-00101, “Preparation, Review, and Approval of Written Instructions,” Revision 39

APA-ZZ-00600, “Design Change Control,” Revision 022

APA-ZZ-00500, “Corrective Action Program,” Revision 035

APA-ZZ-00140, “Environmental And Other Licensing Evaluations,” Revision 029

APA-ZZ-00604, “Requests For Resolution,” Revision 018

APA-ZZ-00605, “Temporary System Modifications,” Revision 014

APA-ZZ-04005, “Design Development,” Revision 036

APA-ZZ-04023, “Calculations,” Revision 016

APA-ZZ-04032, “Design Input Control,” Revision 019

APA-ZZ-00108, “Primary Licensing Document Change/Revision Process,” Revision 023

EDP-ZZ-04055, “Design Bases Control,” Revision 004

EDP-ZZ-04015, “Evaluation And Processing Requests For Resolution (RFRs),” Revision 004

PDP-ZZ-04100, “Review , Planning, Implementation And Closure of Modification Packages,” Revision 001

APA-ZZ-00107, “Review of Current Industry Operating Experience,” Revision 9

E-0, “Reactor Trip or Safety Injection,” Revision 1B7

E-1, “Lossof Reactor or Secondary Coolant,” Revision 1B4

E-2, “Faulted Steam Generator Isolation,” Revision 1B2

E-3, “Steam Generator Tube Rupture,” Revision 1B5

ECA-0.0, “Loss of All AC Power,” Revision 1B3

ECA-0.1, “Loss of All AC Power Recovery without SI Required,” Revision 1B3

ECA-0.2, “Loss of All AC Power Recovery with SI Required,” Revision 1B3

ECA-1.1, “Loss of Emergency Coolant Recirculation,” Revision 1B3

ECA-2.1, “Uncontrolled Depressurization of All Steam Generators,” Revision 1B4

ECA-3.1, “SGTR with Loss of Reactor Coolant - Subcooled Recovery Desired,” Revision 1B3

ECA-3.2, “SGTR with Loss of Reactor Coolant - Saturated Recovery Desired,” Revision 1B3

ECA-3.3, “SGTR without Pressurizer Pressure Control,” Revision 1B3

EDP-ZZ-04055, “Design Bases Control,” Revision 004

ES-0.0, “Rediagnosis,” Revision 1-4

ES-0.1, “Reactor Trip Response,” Revision 1B4

ES-0.2, “Natural Circulation Cooldown,” Revision 1B2

ES-0.3, “Natural Circulation Cooldown with Steam Void in Vessel (with RVLIS),” Revision 1B2

ES-0.4,“Natural Circulation Cooldown with Steam Void in Vessel (without RVLIS),” Revision1B2

ES-1.1, “SI Termination,” Revision 1B4

ES-1.2, “Post LOCA Cooldown and Depressurization,” Revision 1B3

ES-1.3, “Transfer to Cold Leg Recirculation,” Revision 1B3

ES-1.4, “Transfer to Hot Leg Recirculation,” Revision 1B1

ES-3.1, “Post-SGTR Cooldown using Backfill,” Revision 1B0

ES-3.2, “Post-SGTR Cooldown using Blowdown,” Revision 1B0

ES-3.1, “Post-SGTR Cooldown using Steam Dump,” Revision 1B0

FR-C.1, “Response to Inadequate Core Cooling,” Revision 1B4

FR-C.2, “Response to Degraded Core Cooling,” Revision 1B3

FR-H.1, “Response to Loss of Secondary Heat Sink,” Revision 1B3

FR-S.1, “Response to Nuclear Power Generation,” Revision 1B4

MPM-FC-QK002, “Auxiliary Feedwater Pump Turbine Five-Year Internal Inspection,” Revision 012

OTO-AL-00001, “Aux Feed Pump Low Suction Pressure Channel Failure,” Revision 001

OSP-AL-P001A, “Motor Driven Aux. Feedwater Pump ‘A’ Inservice Test,” Revision 038

OSP-AL-P001B, “Motor Driven Aux. Feedwater Pump ‘B’ Inservice Test,” Revision 036

OSP-AL-P002, “Turbine Driven Aux. Feedwater Pump Inservice Test,” Revision 045

OSP-AL-00001, “AFW Flow Paths Valve Alignment,” Revision 005

OSP-AL-V0001A, “Train ‘A’ Auxiliary Feedwater Valve Operability,” Revision 029

OSP-AL-V0001B, “Train ‘B’ Auxiliary Feedwater Valve Operability,” Revision 025

OSP-AL-V0001C, “TD Auxiliary Feedwater Valve Operability,” Revision 027

OSP-AL-V0002, “Auxiliary Feedwater Valve Operability,” Revision 017

OSP-AL-V0002A, “Auxiliary Feedwater and Steam Supply Check Valve Operability,” Revision 010

FR-H.5, “Response to Steam Generator Low Level,” Revision 1-2

ISP-SA-00001, “Response Time Test For Channel I BOP ESFAS Steam Generator Level LO-LO Start of “A” MDAFP Logic,” Revision 002

ISP-SA-2413A, “Diesel Generator and Sequencer Testing (Train A),” Revision 016

ITM-ZZ-VT001, “Diagnostic Calibration and Testing of Rising Stem, Modulating Air Operated Valves,” Revision 003

ITP-ZZ-00004, “Response Time Testing Program,” Revision 012

OSP-AL-00002, “AFW TO Steam Generators Flow Path Verification,” Revision 004

OSP-AL-00003, “Aux Feedwater LSP CST to ESW Valve Operability,” Revision 009

OSP-KA-V0003, “Nitrogen Accumulator Leak Rate Test,” Revision 012

OSP-SA-0007A, “Train ‘A’ AFAS Slave Relay Test,” Revision 012

OSP-SA-02416, “ESFAS Turbine Driven Auxiliary Feedwater Pump Response Time Test,” Revision 006

OTR-RL-RK127, “Annunciator Response Procedure - Windows 127A Through 127F,” Revision 006

Technical Specifications:

3.3.1 Reactor Trip System (RTS) Instrumentation, Amendment 133

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Amendment 133

3.3.3 Post Accident Monitoring (PAM) Instrumentation, Amendment 133

3.3.4 Remote Shutdown System, Amendment 133

3.7.5 Auxiliary Feedwater System, Amendment 158

3.7.6 Condensate Storage Tank (CST), Amendment 133

3.7.8 Essential Service Water System, Amendment 133

Technical Specification Bases, “Atmospheric Steam Dump Valves (ASDs),” Section 3.7.4, Revision 0

Technical Specification Bases, “Auxiliary Feedwater (AFW) System,” Section B3.7.5 , Revision 4h

Technical Specification Bases,“Condensate Storage Tank (CST),” Section B3.7.6, Revision 3

Technical Specification Bases,“Essential Service Water (ESW) System,” Section B3.7.8, Revision 4f

Technical Specification Bases Change Notices:

01-009	02-003	00-022
03-008	02-005	00-017

Tests

CS-03AL03, “Auxiliary Feedwater Pump PAL02 Endurance Test (Hot Functional Testing)” Revision 0

ETP-AL-00001, “PAL01A Pump Characteristics Data Collection," Revision 5 (both the test procedure and the test results, for the test performed following installation of automatic recirculation control valve, were reviewed)

ETP-AL-00002, “PAL01B Pump Characteristics Data Collection," Rev 4 (both the test procedure and the test results, for the test performed following installation of automatic recirculation control valve, were reviewed)

Surveillance Tasks

S419140	S517237	S565994	S620074	S675651	S700963
S428309	S540873	S594196	S647976	S675652	S706920
S455897					

System Descriptions

M-00AL (Q), “Auxiliary Feedwater System,” Revision 5
M-00FC (Q), “Auxiliary Turbines System,” Revision 4

Work Documents

W220250	W222760	W226687	W235217	W238900
W220897	W224246	W226858	W235218	W709879
W220897A				

10 CFR 50.59 Evaluations Reviewed

Modification Package CMP 00-1009A, “Feedwater Isolation Valve Actuator Replacement,” Revision 1 (Evaluation dated March 10, 2004)

Modification Package MP 00-1009A, “Replace Existing MFIV Actuators with System Process Medium Actuators,” (Evaluation dated April 11, 2003)

Modification Package MP 03-1012C, “Cycle 14 Core Design,” (Evaluation dated May 24, 2004)

Procedure EDP-ZZ-03000, “Containment Building Coatings,” Revision 9 (Evaluation dated April 18, 2004)

Calculation AL-30, “Steam Generator Tube Rupture Overfill Analysis,” Revision 002 (Evaluation dated June 24, 2003)

Licensing Impact Review for Request For Resolution RFR 23374A dated August 6, 2004 (Evaluation dated August 19, 2004)

10 CFR 50.59 Screenings Reviewed

Procedure ES-1.1, “Safety Injection Termination,” Revision 1B3, (Screening dated April 9, 2004)

Procedure OTN-AL-00001, “Auxiliary Feedwater System,” Revision 18, (Screening dated July 28, 2004)

Procedure OSP-AL-00003, “Auxiliary Feedwater LSP Condensate Storage Tank to Essential Service Water Valve Operability,” Revision 8, (Screening dated March 20, 2002)

Procedure EDP-ZZ-03000, “Containment Building Coatings,” Revision 9, (Screening dated April 17, 2004)

Modification Package MP 02-1018A, “Install New Auto Recirc Control Check Valve in Discharge Line of each of the MDFWPs,” (Screening dated April 11, 2003)

Modification Package MP 00-1009A, “Replace Existing MFIV Actuators with System Process Medium Actuators,” (Screening dated April 11, 2003)

Modification Package MP 03-1012C, “Cycle 14 Core Design,” (Screening dated May 24, 2004)

Calculation AL-22, “AFW-CST Level Setpoints,” Revision 002, (Screening dated March 11, 2002)

Calculation AL-33, “Provide Allowable Vibration Levels For Auxiliary Feedwater,” Revision 002, (Screening dated June 6, 2004)

Calculation AL-30, “SGTR Overfill Analysis,” Revision 002, (Screening dated June 13, 2003)

Licensing Impact Review for RFR 22046B dated June 14, 2004 (Screening dated June 14, 2004)

Licensing Impact Review for RFR 23374A dated August 6, 2004 (Screening dated August 6, 2004)

Licensing Impact Review for MP 02-1018, Revision A, “Installation of MDAFPs Discharge Auto Recirculation Control Check Valve,” (Screening dated April 11, 2003) and Field Change Notice 9, which resulted in issuance of Revision B (Screening dated June 1, 2004)

Applicability Determinations Reviewed

Procedure APA-ZZ-00315, “Configuration Risk Management Program,” Revision 002 (Applicability Determination dated May 13, 2004)

Procedure EDP-ZZ-03000, “Containment Building Coatings,” Revision 9, (Applicability Determination dated April 16, 2004)

Procedure TDP-ZZ-00052, “Senior Reactor Operator Training Program,” Revision 12 (Applicability Determination dated May 16, 2003)

Modification Package MP 00-1009A, “Replace Existing MFIV Actuators with System Process Medium Actuators,” (Applicability Determination dated April 11, 2003)

Calculation AL-30, “Steam Generator Tube Rupture Overfill Analysis,” Revision 002 (Applicability Determination dated June 13, 2003)

Licensing Impact Review for MP 02-1018, Revision A, “Installation of MDAFPs Discharge Auto Recirculation Control Check Valve,” (Applicability Determination dated April 11, 2003) and Field Change Notice 9 which resulted in issuance of Revision B (Applicability Determination dated June 1, 2004)