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

July 11, 2002

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

SUBJECT: CALLAWAY PLANT - REVISED NRC INTEGRATED INSPECTION REPORT 50-483/02-04

Dear Mr. Randolph:

On May 24, 2002, the NRC completed an inspection at your Callaway Plant. The enclosed report documents the inspection findings, which were discussed on May 24, 2002, with Mr. R. Affolter and other members of your staff.

On June 24, 2002, we transmitted the above referenced inspection report with an error. The report incorrectly included a noncited violation regarding Fire Door DSK 33022. We apologize for any inconvenience this may have caused. Please replace the report sent on June 24, 2002, with the enclosed revised report in its entirety.

Sincerely,

/RA/

Charles S. Marschall, Chief
Engineering and Maintenance Branch
Division of Reactor Safety

Docket: 50-483
License: NPF-30

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July 11, 2002

R E V I S E D

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President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, Missouri 65251

SUBJECT: CALLAWAY PLANT- NRC INTEGRATED INSPECTION REPORT 50-483/02-04

Dear Mr. Randolph:

On May 24, 2002, the NRC completed an inspection at your Callaway Plant. The enclosed report documents the inspection findings, which were discussed on May 24, 2002, with Mr. R. Affolter and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has identified two violations of regulatory requirements that were evaluated under the risk significance determination process as having very low safety significance (green). Because of the very low safety significance, the violations are being treated as noncited violations, consistent with Section VI.A.1 of the Enforcement Policy. Additionally, there was one finding of very low safety significance (green) identified in the report. If you deny the noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 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.

In accordance with 10 CFR 2.790 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/

Charles S. Marschall, Chief
Engineering and Maintenance Branch
Division of Reactor Safety

Docket: 50-483
License: NPF-30

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-483
License:	DPF-30
Report No:	50-483/ 02-04
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	May 6 - 24, 2002
Team Leader:	M. F. Runyan, Senior Reactor Inspector, Engineering Maintenance Branch
Inspectors:	P.A. Goldberg, Reactor Inspector, Engineering Maintenance Branch
	W. M. McNeill, Reactor Inspector, Engineering Maintenance Branch
	J . Taylor, Reactor Inspector, Engineering Maintenance Branch
Accompanying Personnel:	H. Anderson, Beckman and Associates
	G. Skinner, Beckman and Associates
Approved By:	Charles S. Marschall, Chief Engineering Maintenance Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000483-02-04; Union Electric Company; 05/06-24/2002; Callaway Plant, safety system design and performance capability

The inspections were conducted by four regional inspectors and two contractors. The inspectors identified three green findings, which were characterized as noncited violations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) and determined by using Inspection Manual Chapter 0609, "Significance Determination Process (SDP)." Findings for which the significance determination process does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

Cornerstone: Mitigating Systems

- Green. Requirements in Procedure EDP-ZZ-04023, "Calculations", Revision 14, were not applied correctly to the diesel generator steady-state loading calculation contained in Callaway Drawing E-21005, "List of Loads Supplied by Emergency Diesel Generator," Revision 25. The drawing functioned as a calculation, but lacked the quality requirements for calculations required by this procedure.

  The failure to follow procedural requirements was identified as a violation of Criterion V to 10 CFR Part 50, Appendix B, "Instructions, Procedures, and Drawings." This finding was of very low safety significance since there was no actual loss of safety function (the diesel generators retained adequate margin). Because of the low safety significance and the licensee's action to place the issue in their corrective action program (CAR 200203017), this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy (50-483/0204-02) (Section 1R21.5.b).

- Green. Calculation E-B-21, "LSELS Degraded Voltage Setpoint Calculation," Revision 0, used to determine the degraded voltage relay dropout setting, referred to superseded calculations for important design inputs, and had not been updated to reflect plant configuration and loading changes. This was contrary to the requirement in Procedure EDP-ZZ-04023 that calculations be revised whenever a new or revised calculation (having an effect on the calculation) is issued.

  The failure to follow procedural requirements was identified as a violation of Criterion V to 10 CFR Part 50, Appendix B, "Instructions, Procedures, and Drawings." This finding was of very low safety significance since there was no actual loss of safety function (the degraded voltage relay setpoint remained valid). Because of the low safety significance and the licensee's action to place the issue in their corrective action program (CARs 200203080 and 200203057), this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy (50-483/0204-03) (Section 1R21.5.b).

- Green. Two licensee calculations contained incomplete and incorrect methods of evaluating degraded voltage conditions. Calculation E-B-21, "LSELS Degraded Voltage Setpoint Calculation," Revision 0, did not consider the voltage requirements for non-motor loads in determining the degraded voltage relay setting. In addition, Calculation ZZ-214, "Motor Operated Valve Feeder Cable Voltage Drops," Addenda 1, Revision 2, for determining minimum voltage to motor-operated valves, did not consider the effect of motor starting currents in circuit elements upstream of the motor control centers.

  This finding, which did not involve a violation of NRC requirements, was of very low safety significance because the calculation errors did not result in an actual loss of safety function (the degraded voltage relay setpoint remained valid) (50-483/0204-04) (Section 1R21.5.b).

Report Details

1 **REACTOR SAFETY**

Introduction

A team inspection was performed to verify that facility safety system design and performance capability were adequate and that the initial design and subsequent modifications have preserved the current design basis 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. The inspection effort 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 probabilistic risk assessment model for the Callaway Plant is based on the capability of the as-built safety systems to perform their intended safety functions successfully. The area and scope of the inspection were determined by reviewing the licensee's probabilistic risk analysis models to identify the most risk significant systems, structures, and components according to their ranking and potential contribution to dominant accident sequences and/or initiators. Deterministic effort was also applied in the selection process by considering recent inspection history, recent problem area history, and all modifications developed and implemented.

The team reviewed in detail the emergency diesel generators and the component cooling water system. The primary review prompted parallel review and examination of support systems, such as, electrical power, instrumentation, room cooling systems, and related structures and components.

The objective of this inspection was to assess the adequacy of calculations, analyses, engineering processes, and engineering and operating practices that were used to support the performance of the safety systems selected for review and the necessary support systems during normal, abnormal, and accident conditions. Acceptance criteria utilized by the NRC inspection team included NRC regulations, the Technical Specifications, applicable sections of the Final Safety Analysis Report, applicable industry codes and standards, as well as, industry initiatives implemented by the licensee's programs.

An inspection to assess the performance of the licensee's program to meet the regulatory requirements of 10 CFR 50.59, "Changes, Tests, and Experiments," was conducted during the second week of the inspection.

1R02 Evaluation of Changes, Tests, and Experiments (71111.02)

a. Inspection Scope

The inspectors found that no safety evaluations had been performed since the implementation of the new 10 CFR 50.59 procedure.

The inspectors reviewed six assessments pertaining to modifications in which the licensee determined that a full evaluation was not required by 10 CFR 50.59.

b Findings

No findings of significance were identified.

1R21 Safety System Design and Performance Capability (71111.21)

.1 System Requirements

a. Inspection Scope

The team reviewed the following attributes for the component cooling water system and the emergency diesel generators: (1) process medium (water, steam, and air), (2) energy sources, (3) control systems, and (4) equipment protection. The team verified that procedural instructions to operators were consistent with operator actions required to meet, prevent, and/or mitigate design basis accidents. The review also considered requirements and commitments identified in the Final Safety Analysis Report, Technical Specifications, design basis documents, and plant drawings.

b. Findings

No findings of significance were identified.

.2 System Condition and Capability

a. Inspection Scope

The team reviewed the periodic testing procedures for the component cooling water system and the emergency diesel generators to verify that the design requirements were adequately demonstrated. The team reviewed the environmental qualification of a sample of system components to verify the capability to operate under design environmental conditions and the assumed operating parameters including: voltage, speed, power, flow, temperature, and pressure.

The team also reviewed the systems' operations by conducting system walkdowns; reviewing normal, abnormal, and emergency operating procedures; and reviewing the Final Safety Analysis Report, Technical Specifications, design calculations, drawings, and procedures.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed a sample of problems identified by the licensee in the corrective action program to evaluate the effectiveness of corrective actions related to design issues. The sample included open and closed condition reports for the past three years that identified issues affecting the selected systems.

b. Findings

No findings of significance were identified.

.4 System Walkdowns

a. Inspection Scope

The team performed walkdowns of the accessible portions of the component cooling water system and the emergency diesel generators as well as the required support systems. The walkdowns focused on the installation and configuration of power supplies, piping, components, and instruments. 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 local operator action,
- The materiel condition and preservation of systems and equipment, and
- The conformance of the currently installed system configurations to the current design and licensing bases.

b. Findings

No findings of significance were identified.

.5 Design Review

a. Inspection Scope

The team reviewed the current as-built instrument and control, electrical, and mechanical design of the component cooling water system and the emergency diesel generators. These reviews included a review of design assumptions, calculations, required system thermal-hydraulic performance, electrical power system performance, protective relaying, and instrument setpoints and uncertainties. The team also performed a single failure review of individual components to determine the effects of such failures on the capability of the systems to perform their design safety functions.

The team reviewed calculations, drawings, specifications, vendor documents, Final Safety Analysis Report, Technical Specifications, emergency operating procedures, and temporary and permanent modifications.

b. Findings

Emergency Diesel Generator Steady State Loading

A (green) noncited violation was identified for failure to follow procedural requirements involving a safety-related calculation. The team determined that certain requirements contained in Procedure EDP-ZZ-04023, "Calculations," Revision 14, were not applied correctly to the diesel generator steady state loading calculation contained in Callaway Drawing E-21005, "List Of Loads Supplied By Emergency Diesel Generator," Revision 25. The drawing contained an itemized listing of equipment powered by the diesels during the loss of coolant accident (LOCA) and station blackout scenarios, and included the kilowatt (kW) loading for each load. The drawing also contained a summation of the total kW loading for both redundant trains.

A calculation of diesel loading did not exist in the licensee's database. Consequently, the team determined that Drawing E-21005 was a de-facto calculation and that design control requirements normally associated with calculations were also applicable to this drawing. Procedure EDP-ZZ-04023 required that calculations define the assumptions and design inputs used, and to include specific identification of references. The procedure also required performance and documentation of the calculation verification, including checking inputs, assumptions, mathematical accuracy, and results. Drawing E-21005 lacked these qualities.

The team also noted that Drawing E-21005 contained an apparent math error resulting in an overstatement of diesel generator load in the summary table of approximately 112 kW for each scenario. It was further noted that the error, as an apparent consequence of inadequate design verification, had persisted for multiple revisions of the drawing.

The team found that the lack of design inputs and references hindered a thorough review of the diesel loading. However, the team's review of major loads and the apparent margin between the maximum loading and diesel rating indicated that the diesels had adequate capability to perform their safety function. Consequently, the team concluded that there was no evidence that the lack of proper design control measures had resulted in the potential for an overloaded diesel.

The team determined that the issue had a credible impact on safety because a crucial design control parameter (the diesel loading) was not being controlled in a rigorous manner and that this situation had resulted in a persistent error in the analysis. The mitigating system cornerstone was affected since at least one of the emergency diesel generators is required to mitigate a design basis event.

Using the significance determination process, the team determined that only the mitigating systems cornerstone was affected and that there was no actual loss of safety

function as the emergency diesel generators remained functional. Therefore, the problem had a very low safety significance (green).

Criterion V to 10 CFR Part 50, Appendix B, “Instructions, Procedures, and Drawings,” requires that activities affecting quality be performed in accordance with applicable procedures. The failure to apply adequate design control measures to the diesel loading calculation (Drawing E-21005) as delineated in Procedure EDP-ZZ-04023 was identified as a violation of Criterion V to 10 CFR Part 50, Appendix B. However, because of the very low safety significance and the licensee’s action to place the issue in their corrective action program (CAR 200203017), this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy (50-483/0204-02).

Design Control Measures for Degraded Voltage Calculations

A (green) noncited violation was identified for failing to follow procedural requirements to properly control design input for a safety-related calculation. The team determined that required design control measures were not correctly applied to Calculation E-B-21, "LSELS Degraded Voltage Setpoint Calculation," Revision 0. Calculation E-B-21, used to determine the degraded voltage relay dropout setting, referred to superseded calculations for important design inputs, and had not been updated to reflect plant configuration and loading changes.

Design input to Calculation E-B-21 was provided by superseded Calculation E-B-5, "Voltage Drop Calculations for Callaway (Input Data)," Revision 3, for cable lengths and impedances, and to superseded Calculation E-B-17, "Voltage Drop Calculations & Final Tap Settings For Callaway (Case Results),” Revision 1, for transformer tap settings. These two input calculations had been replaced by load flow Calculation ZZ-62, "Plant Load Flow Calculation,” Revision 7. Calculation E-B-21 had not been revised to reflect recent changes to Calculation ZZ-62. A cursory comparison of Calculation E-B-21 with Calculation ZZ-62 showed numerous slight differences in cable impedances, some of which produced slightly non-conservative results.

Calculation E-B-21 did not reflect the latest bus loading information contained in load flow Calculation ZZ-62 and its associated bus loading Calculation ZZ-179, "AC Bus Load List," Revision 4. Both calculations, ZZ-179 and ZZ-62, had been periodically updated to correct errors or reflect the changes in plant configuration, but these changes had not been incorporated into Calculation E-B-21. For instance, the relocation of the power feeder for diesel building supply fans under Modification MP 98-1025A, "Change Power Supply For Diesel Building Supply Fans,” was not reflected in Calculation E-B-21. The team determined that some discrepancies were conservative and others were nonconservative. The overall effect on Calculation E-B-21 was conservative.

The team determined that the issue had a credible impact on safety because an important design control protective feature (the degraded voltage relay setpoint) was not being controlled in a rigorous manner. The mitigating system cornerstone was affected since the integrity of the Class 1E electrical buses is credited for mitigating design basis events.

Using the significance determination process, the team determined that only the mitigating systems cornerstone was affected and that there was no actual loss of safety function as the team concluded that the value of degraded voltage relay setpoint remained acceptable. Therefore, the problem had a very low safety significance (green).

Procedure EDP-ZZ-04023 required that calculations be revised whenever a new or revised calculation (having an effect on the calculation) is issued, regardless of whether the effect is conservative or nonconservative. Calculation E-B-21 was not revised as required by this procedure.

Criterion V to 10 CFR Part 50, Appendix B, “Instructions, Procedures, and Drawings,” requires that activities affecting quality be performed in accordance with applicable procedures. The failure to apply adequate design control measures to Calculation E-B-21, as delineated in Procedure EDP-ZZ-04023, was identified as a violation of Criterion V to 10 CFR Part 50, Appendix B. However, because of the very low safety significance and the licensee’s action to place the issue in their corrective action program (CARs 200203080 and 200203057), this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy (50-483/0204-03).

Inadequate Criteria for Degraded Voltage Calculations

A (green) finding was identified for incomplete and incorrect methods used in safety-related calculations to evaluate degraded voltage conditions. Calculation E-B-21 did not consider the voltage requirements for nonmotor loads in determining the degraded voltage relay setting. In addition, Calculation ZZ-214, "Motor Operated Valve Feeder Cable Voltage Drops", Addenda 1, Revision 2, for determining minimum voltage to motor-operated valves, did not consider the effect of motor starting currents in circuit elements upstream of the motor control centers (MCCs).

Branch Technical Position PSB-1 established that degraded voltage relay settings should be based on an analysis of Class 1E equipment at all voltage levels. The acceptance criteria in Calculation E-B-21 was based on the assumption that 92 percent of 460V (423.2V) at the worst-case MCC would provide adequate voltage to ensure operability of the MCC control circuits. The criteria were also based on the assumption that voltage to motors would be assured by sizing motor feeders in accordance with criteria in the Bechtel Design Guide E-2.11.21, “Calculations and Voltage Drop Regulations” and Callaway Design Guide EE-003, “Electrical Load Growth.” The criteria did not address non-motor equipment, such as battery chargers. No calculation was available to demonstrate that battery chargers or other non-motor equipment would receive adequate voltage under worst-case conditions. In response to the team's request, the licensee provided qualification test data and preliminary calculations demonstrating adequate performance of the battery chargers under degraded voltage conditions.

The second issue involved a non-conservative analysis technique used to calculate minimum voltages. Calculation ZZ-214, for motor-operated valve feeder cable voltage drop, assumed a voltage of 92 percent of 460V at the worst case MCC based on Calculation E-B-21. (In some cases, it considered slightly higher voltages for other MCCs, based on margins for non-worst-case MCCs demonstrated in

Calculation E-B-21.) Because the loading used to establish the minimum MCC voltages in Calculation E-B-21 did not include motor-operated valve starting inrush current, the calculated MCC voltages were nonconservative for this purpose. Preliminary calculations by the licensee in response to the team's questions indicated that adequate voltage was still available to all motor-operated valves, although with reduced margins. Callaway Action Request 200203091 was issued to track revision of affected calculations.

Although a specific regulatory requirement was not involved, the team considered the calculation errors to have a credible impact on safety, given that they could have resulted in unacceptable degraded grid protection. Only the mitigating systems cornerstone was affected and there was no actual loss of safety function as the value of the degraded voltage relay setpoint remained acceptable. Therefore, the problem had a very low safety significance (green) (50-483/0204-04).

.6 Safety System Inspection and Testing

a. Inspection Scope

The team reviewed the program and procedures for testing and inspecting selected components in the component cooling water system and the emergency diesel generators. The review included the results of surveillance tests required by the Technical Specifications.

The team reviewed the program and procedures for testing and inspecting the component cooling water pumps and heat exchangers.

b. Findings

No findings of significance were identified.

4 OTHER ACTIVITIES (ZA)

4OA6 Management Meetings

Exit Meeting Summary

The team leader presented the inspection results to Mr. R. Affolter, Vice President, Nuclear, and other members of licensee management at the conclusion of the onsite inspection on May 24, 2002.

At the conclusion of this meeting, the team leader asked the licensee's management whether any materials examined during the inspection should be considered proprietary. Some proprietary information was identified, but it was returned to the licensee.

ATTACHMENT

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M. Haag, Consulting Design Engineer, Nuclear Engineering

NRC:

V. Gaddy, Senior Resident Inspector
J. Hanna, Resident Inspector

ITEMS OPENED AND CLOSED

Opened and Closed

50-483/0204-02	NCV	Inadequate Calculation Of Diesel Loading (Section 1R21.5.b)
50-483/0204-03	NCV	Failure To Control Design Input For Degraded Voltage Relay Calculation (Section 1R21.5.b)
50-483/0204-04	FIN	Incomplete and Erroneous Methods Used In Degraded Voltage Relay Calculation (Section 1R21.5.b)

Documents Reviewed:

Callaway Action Requests

199201472	200002042	200102209	200203025	200203091	200203342
200000185	200002057	200202900	200203045	200203156	200203344
200000456	200002082	200202999	200203055	200203167	200203348
200000761	200002121	200203010	200203057	200203213	200203349
200001236	200002821	200203016	200203080	200203271	200203354
200001815	200101957	200203017			

Requests for Resolution

13786
17902

PM Tasks

A592312A
P592312
P618126

Procedures

00A-NE-00002, “Locally Starting NE02,” Revision 0

00A-ZZ-IN010, “Emergency Fuel Tank Operator Aid,” Revision 0

00A-ZZ-SEC07, “D/G B Operator Aid,” Revision 2

APA-ZZ-00143, “10 CFR 50.59 Reviews,” Revision 0

EDP-ZZ-04023, “Calculations,” Revision 14

ETP-EG-00001, “Component Cooling Water Heat Exchanger Test,” Revision 2

ETP-EG-00002, “Component Cooling Water Flow Verification,” Revision 0

ITL-EG-00F66, “Loop-Flow; CCW To Seal Water Heat Exchanger Flow,” Revision 6

MSM-ZZ-QV001, “IST Relief Valve Surveillance Test,” Revision 23

MTE-ZZ-QA023, “MOVATS UDS Testing Of Torque Controlled Limitorque Motor-Operated Rotating Rising Stem Valves,” Revision 0

MZM-ZZ-QV018, “Relief Valve Test,” Revision 008

OSP-EG-P01AC, “CCW Train Pump A and Valve Inservice Test,” Revision 19

OSP-EG-P01BD, “CCW Train Pump B and Valve Inservice Test,” Revision 17

OSP-NE-0001A, “Standby Diesel Generator A Periodic Tests,” Revision 10 with TCN 02-0084

OSP-NE-0001B, “Standby Diesel Generator B Periodic Tests,” Revision 10 with TCN 02-0085 and TCN 01-0442

OTA-KJ-00122, “Annunciator Response Procedure Diesel Generator NE02 Control Panel,” Revision 13

OTA-RL-RK-051, “Annunciator Response Procedure Windows 51A Through 51F,” Revision 003

OTN-EG-00001, “Component Cooling Water System,” Revision 18

OTN-NE-0001B, "Standby Diesel Generation System Train B", Revision 11

OTN-NE-0001B, "Standby Diesel Generation System Train A", Revision 10

Calculations

512-34-10466, “Containment LOCA P/T Analysis,” Revision A

84-0291, “Callaway Modification Package (CMP) #84-0291- Day Tank Table Of Scale Markings,” Revision A, Field Change Notice #01 and Addenda 1, Revision 0

BIT-M-00072, “Diesel Generator Operability When Outside Ambient Temperature Is -25 °F,” May 12, 1980

E-B-10, "Allowable MCC Circuit Lengths For Circuits With Auxiliary Relay Coils In Parallel With the Starter Coil,” Revision 003

E-B-12, "Close Circuit Lengths For Callaway Diesel Generator Breakers," Revision 0

E-B-15, "Voltage Drop For Class 1E and Nonclass 1E Distribution Transformers,” Addenda No. 1, Revision 1

E-B-17, "Voltage Drop Calculations and Final Tap Settings For Callaway (Case Results)," Revision 1

E-B-21, "LSELS Degraded Voltage Setpoint Calculation," Revision 0

E-B-5, "Voltage Drop Calculations For Callaway (Input Data)," Revision 3

E-H-10, "System NE Protective Relays," Addenda No. 3, Revision 4

EF-38, Addenda No. 1, “Heat Rejected To the UHS Pond,” Revision 0

EF-38, Addenda No. 2, “Heat Rejected To the UHS Post-LOCA,” Revision 0

EF-38, Addenda No. 3, “Heat Rejected To the UHS Post-LOCA,” Revision 0

EF-38, Addenda No. 4, “UHS Heat Loads Post-LOCA,” Revision 0

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