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

October 30, 2000

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

SUBJECT: NRC INSPECTION REPORT NO. 50-483/00-13

Dear Mr. Randolph:

On August 25, 2000, the NRC completed a 1-week team fire protection triennial baseline inspection of your Callaway Plant facility. Additional onsite inspection was performed on September 8 and 9, 2000. The enclosed report presents the results of this inspection. We discussed the results of the onsite inspection with Mr. M. Taylor, Manager, Nuclear Engineering, and members of your staff on August 31, 2000. On September 26, 2000, we conducted a telephonic exit meeting with Mr. M. Taylor, Manager, Nuclear Engineering, and members of your staff to inform you of the results of the additional onsite inspection.

The inspection involved an examination of the effectiveness of activities conducted under your license as they related to implementation of your NRC-approved Fire Protection Program. 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 identified two violations of license conditions. One violation concerns the failure to maintain in effect all provisions of your NRC-approved fire protection program. The other violation involves changes to your NRC-approved fire protection program, made without prior Commission approval, that adversely affected your ability to achieve and maintain safe shutdown. Using the significance determination process, the NRC found these findings to be of very low risk significance. The violations described in the attached inspection report are being treated as Non-Cited Violations, consistent with Section VI.A of the NRC Enforcement Policy. If you contest these Non-Cited Violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors at the Callaway Plant facility.

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/NRC/ADAMS/index.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/

Jeffrey L. Shackelford, Chief
Engineering and Maintenance Branch
Division of Reactor Safety

Docket No.: 50-483
License No.: NPF-30

Enclosure:
NRC Inspection Report No.
50-483/00-13

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-483
License No.:	NPF-30
Report No.:	50-483/00-13
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	August 21 - 25, 2000 September 7 - 8, 2000
Team Leader	R. L. Nease, Senior Reactor Inspector Engineering and Maintenance Branch
Inspectors:	F. Brush, Senior Resident Inspector Project Branch B
	D. N. Graves, Senior Project Engineer Project Branch A
	R. Mullikin, Senior Reactor Inspector Engineering and Maintenance Branch
	J. E. Whittemore, Senior Reactor Inspector Engineering and Maintenance Branch
Accompanying Personnel	P. Qualls, Fire Protection Engineer Office of Nuclear Reactor Regulation
Approved By:	Jeffrey L. Shackelford, Chief Engineering and Maintenance Branch Division of Reactor Safety

ATTACHMENTS:

Attachment 1: Supplemental Information

Attachment 2 NRC's Revised Reactor Oversight Process

SUMMARY OF FINDINGS

Callaway Nuclear Plant, Unit 1
NRC Inspection Report No. 50-483/00-013

IR 05000483-00-13; on 08/21-25/2000; Union Electric Co.; Callaway Plant; Fire Protection Report; Fire Protection.

This report covers a 1-week onsite inspection by a team of four Region IV inspectors, and one Office of Nuclear Reactor Regulation observer during August 21-25, 2000. Additional onsite inspection was performed by the team leader September 7-8, 2000. The inspectors used NRC Inspection Procedure 7111105T to evaluate the licensee's implementation of their NRC-approved fire protection program. However, certain associated circuits issues which are the subject of an ongoing, voluntary industry initiative, were not reviewed in this inspection. This portion of the inspection procedure was not performed in order to permit the industry to develop an approach and methodology to resolving the associated circuits issues, that the NRC can endorse, and to provide time for licensees to implement the resolution methodology, once approved.

This inspection identified two green findings, both of which were considered to be Non-Cited Violations of NRC regulatory requirements. The significance of the issues is indicated by their color (green, white, yellow, red) and was determined through the use of the Significance Determination Process as described in NRC Inspection Manual Chapter 0609.

Cornerstone: Mitigating Systems

- Green. The inspectors identified that a 3-hour rated fire door between the Train A and Train B safety-related ac switchgear rooms was ajar. This failure to properly maintain in effect all provisions of their NRC-approved fire protection program is a violation of Operating License Condition 2.C(5)(c). This violation is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Suggestion-Occurrence-Solution 00-1927 (Section 1R05.4).

  This finding was of very low safety significance, because the door was ajar for less than 3 hours, the ignition frequency was relatively low, and the fire detection and suppression systems were minimally affected.

Cornerstone: Mitigating Systems

- Green. In Fire Area A-27 (reactor trip switchgear room) the team found that redundant equipment required for safe shutdown of the plant following a fire was not separated in accordance with Section C.5.b of Branch Technical Position Chemical Engineering Branch 9.5-1, in that the 20 feet of horizontal space between redundant trains of safe shutdown equipment contained intervening combustibles. Subsequent to this finding, the licensee identified similar conditions in Fire Areas A-1A (west corridor of the 1974 foot elevation of the auxiliary building), and Fire Area A-18 (north electrical penetration room in the auxiliary building). The team also found that in 1989, and 1996, the licensee

performed engineering evaluations to justify installed configurations in several fire areas, including Fire Areas A-1A, A-18, and A-27, which did not meet the separation criteria of Section C.5.b of Branch Technical Position Chemical Engineering Branch 9.5-1. In performing these evaluations, however, the licensee failed to consider, as intervening combustibles or fire hazards, non-safety-related cables and other equipment located in the 20 foot separation areas between redundant trains of equipment necessary to achieve and maintain safe shutdown conditions. Therefore, the licensee did not identify the safe shutdown equipment which could be vulnerable to fire damage and the operator actions to restore that equipment to service. The failure to identify and evaluate these additional operator actions were considered by the team to have an adverse effect on the licensee's ability to achieve and maintain safe shutdown in the event of a fire. Therefore, the team concluded that without prior approval of the Commission, the licensee made changes to their approved fire protection program that adversely affected their ability to achieve and maintain safe shutdown in the event of a fire in Fire Areas A-1A, A-18, and A-27. This is a violation of Operating License Condition 2.C(5)(d), with three examples, and is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Suggestion-Occurrence-Solution 00-2070 and posted compensatory measures in accordance with the provisions of their fire protection program (Section 1R05.4).

Each example of this violation was evaluated using the significance determination process, which indicated that, for each of the fire areas involved, the violation had very low safety significance, because the ignition frequencies were relatively low, fire detection and suppression systems were not degraded, and operator actions were available to ensure a safe shutdown path for a fire in each of the fire areas.

Report Details

Summary of Plant Status: The plant operated at or near full power throughout the onsite inspection.

1. REACTOR SAFETY

Cornerstones: Initiating Events and Mitigating Systems

1R05 Fire Protection

The purpose of this inspection was to review the Callaway Nuclear Plant, Unit 1, Fire Protection Program, for selected risk significant fire areas, with emphasis on verification that the post-fire safe shutdown capability and the fire protection features provided for ensuring that at least one post-fire safe shutdown success path is maintained free of fire damage. The inspection was performed in accordance with the new NRC regulatory oversight process using a risk-informed approach for selecting the fire areas and attributes to be inspected. The team leader and a Region IV senior reactor analyst used the Callaway Nuclear Plant, Unit 1, individual plant examination of external events to choose several risk-significant areas for detailed inspection and review. The fire areas chosen for review during this inspection were:

- Fire Area A-1 (auxiliary building, elevation 1988 feet)
- Fire Area A-16, (auxiliary building, elevation 2026 feet)
- Fire Area A-27 (reactor trip switchgear room)
- Fire Area C-5 (health physics access control)

For each of these fire areas, the team focused their inspection on the fire protection features and on the systems and equipment necessary for the licensee to achieve and maintain safe shutdown conditions.

.1 Systems Required to Achieve and Maintain Post-Fire Safe Shutdown

a. Inspection Scope

To ensure that at least one post-fire safe shutdown success path was available in the event of a fire in each of the selected areas, the team reviewed the functional requirements identified by the licensee as necessary for achieving and maintaining hot shutdown conditions and the list of safe shutdown equipment required to accomplish those functions documented in Table 9.5B-2 of the Final Safety Analysis Report. The team focused on the following functions that must be ensured to achieve and maintain post-fire safe shutdown conditions: (1) reactivity control capable of achieving and maintaining cold shutdown reactivity conditions; (2) reactor coolant makeup capable of maintaining the reactor coolant level within the level indication in the pressurizer; (3) reactor heat removal capable of achieving and maintaining decay heat removal; and (4) supporting system capable of providing all other services necessary to permit extended operation of equipment necessary to achieving and maintaining hot shutdown conditions.

The team also verified that Table 9.5B-2 included equipment necessary for the safe shutdown systems to accomplish the required functions. To do this, the team reviewed the licensee's list of systems selected to accomplish each of the functions necessary for achieving safe shutdown. In addition, the team reviewed system piping and instrumentation drawings to identify the components in each of the safe shutdown systems necessary for system success, including components that could cause flow diversion or system isolation, and valves interfacing with the primary reactor coolant system boundary.

b. Findings

No findings were identified.

.2 Fire Safe Shutdown Analysis

a. Inspection Scope

For each of the selected fire areas, the team reviewed the licensee's safe shutdown analysis documented in Appendix 5.4A to the Callaway Final Safety Analysis Report , "Safe Shutdown," Revision OL-9, of the Callaway Final Safety Analysis Report to ensure that at least one post-fire safe shutdown success path was available in the event of a fire. This included a review of manual actions required to achieve and maintain hot shutdown conditions and to make the necessary repairs to reach cold shut down within 72 hours.

b. Findings

No findings were identified.

.3 Post-fire Safe Shutdown Circuit Analysis

a. Inspection Scope

The team reviewed the fuse/breaker coordination analysis for the 4.16 kV and 480 Vac switchgear boards required for post-fire safe shutdown and the vital low-voltage dc buses. The purpose of this review was to verify that selective coordination exists between branch circuit protective devices (fuses, breakers, relays, etc.) and the bus feeder breaker/fuse to ensure that in the event of a fire-induced short circuit, the fault would be isolated before the feeder device trips.

b. Findings

No findings were identified.

.4 Fire Protection of Safe Shutdown Equipment

a. Inspection Scope

For the selected fire areas, the team evaluated the adequacy of fire suppression and detection systems, fire area barriers, penetration seals, and fire doors to ensure that at least one train of safe shutdown equipment was free of fire damage. To do this, the team observed the material condition and configuration of the installed fire detection and suppression systems, fire barriers, and construction details and supporting fire tests for the installed fire barriers. In addition, the inspectors reviewed the license documentation, such as exemptions and National Fire Protection Association code deviations to verify that the fire barrier installations met license commitments.

b. Findings

The findings are discussed below by fire area.

Fire Area A-1, Auxiliary Building, Elevation 1988 feet

No findings were identified.

Fire Area A-16, Auxiliary Building, Elevation 2026 feet

No findings were identified.

Fire Area A - 27 Reactor Trip Switchgear Room

During a walkdown of the reactor trip switchgear room, the team noted a 20-foot separation zone between suspended cable trays and the reactor trip switchgear. Located within the 20-foot separation zone were intervening combustibles, such as nonsafety-related cable trays, a nonsafety-related motor control center, a nonsafety-related air handling unit, and one of the control rod drive motor generator sets. The reactor trip switchgear was identified in Table 9.5B-2 of the Final Safety Analysis Report as equipment being necessary for safe shutdown of the plant. Also, located in this fire area was a cable tray that contained safety-related cables, which provided either power or control power for Train B safety-related components, such as the component cooling water pump area cooler, Pressurizer Power-Operated Relief Valve BB-PCV-456A, and all four reactor coolant pump Seal Injection Isolation Valves HV8351A through D. These components were also identified as being required for safe shutdown following a fire, and were included in the licensee's fire hazards analysis. This fire area also contained control cables for Pressurizer Power-Operated Relief Valve BB-PCV-455A, and power cables for the Train A component cooling water pumps and area cooler.

The Callaway Plant Operating License, License Condition 2.C(5)(c), states, in part, that the licensee shall implement and maintain in effect all provisions of the fire protection program as approved in the Callaway Safety Evaluation Report through Supplement 4. Section 9.5.1.5 of the Callaway Safety Evaluation Report, Supplement 3, states, "The applicant's analysis indicated that the only area outside containment where redundant divisions are not separated by barriers in accordance with Section C.5.b of Branch Technical Position Chemical Engineering Branch 9.5-1 is the control room." Section C.5.b(2) of Branch Technical Position Chemical Engineering Branch 9.5-1 provides the following three means of ensuring that one redundant train of equipment necessary to achieve and maintain safe shutdown is free of fire damage:

(a) Separation of cables and equipment and associated circuits of redundance trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers should be protected to provide fire resistance equivalent to that required of the barrier;

(b) Separation of cables and equipment and associated circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system should be installed in the fire area; or

(c) Enclosure of cable and equipment and associated circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system should be installed in the fire area.

During a tour of Fire Area 27, the team found that the configuration of the room did not meet the separation requirements of Branch Technical Position Chemical Engineering Branch 9.5-1, in that, there were intervening combustibles in the 20-foot separation between redundant trains of equipment necessary to achieve and maintain safe shutdown. In response to the team's finding, the licensee initiated Suggestion-Occurrence-Solution 00-2070 and posted compensatory measures in Fire Area-27 in accordance with their fire protection program.

In reviewing the Callaway Plant Combustible/Electrical Fire Hazards Analysis Program, the team found that it stated that exposed electrical cables and electrical components were not considered as intervening combustibles as long as the fire area had adequate fire detection and suppression capability or a designed fire stop within the intervening combustible. Upon questioning by the team, the licensee conducted additional area walkdowns to determine if other fire areas had 20-foot separation zones that contained intervening combustibles. The licensee found similar configurations in Fire Area A-1A (west corridor of the 1974 foot elevation of the auxiliary building), and Fire Area A-18 (north electrical penetration room in the auxiliary building). The licensee revised Suggestion-Occurrence-Solution 00-2070 to include these additional concerns and implemented the appropriate compensatory measures in accordance with their fire protection program.

The Callaway Plant Operating License, License Condition 2.C(5)(d), states, "The licensee may make changes to the approved fire protection program without prior

approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire." The team found that in 1989, and 1996, the licensee performed engineering evaluations to justify installed configurations in Fire Areas A-1A, A-18, and A-27, which did not meet the separation criteria of Section C.5.b of Branch Technical Position Chemical Engineering Branch 9.5-1. In performing these evaluations, however, the licensee failed to consider, as intervening combustibles or fire hazards, non-safety-related cables and other equipment located in the 20 foot separation areas between redundant trains of equipment necessary to achieve and maintain safe shutdown conditions. Therefore, the licensee did not identify the safe shutdown equipment which could be vulnerable to fire damage and the operator actions to restore that equipment to service. Furthermore, the installed configurations did not provide a level of protection equivalent to that which would be provided if the configurations were in accordance with the branch technical position. The failure to identify and evaluate these additional operator actions, and the failure to provide protection equivalent to that required by Section C.5.b of Branch Technical Position Chemical Engineering Branch 9.5-1 were considered by the team to have an adverse effect on the licensee's ability to achieve and maintain safe shutdown in the event of a fire. The team concluded that without prior approval of the Commission, the licensee made changes to their approved fire protection program that adversely affected their ability to achieve and maintain safe shutdown in the event of a fire in Fire Areas A-1A, A-18, and A-27. This is a violation of License Condition 2.C(5)(d), with three examples, and is being treated as a Non-Cited Violation in accordance with Section VI.A of the NRC Enforcement Policy (50-483/0013-01).

Each example of this violation was evaluated using the significance determination process which indicated that, for each of the fire areas involved, the violation had very low safety significance. This was due primarily to the fact that ignition frequencies were relatively low, fire detection and suppression systems were not degraded, and operator actions were available to ensure a safe shutdown path for a fire in each of the fire areas.

Fire Area C - 5, Health Physics Access Control

No findings were identified.

Fire Area C-9, Safety-related AC Switchgear Room, Train A; and
Fire Area C-10, Safety-related AC Switchgear Room, Train B

The inspectors identified, during the initial plant walkdown, that a 3-hour rated fire door between the safety-related ac switchgear rooms was ajar. The latching mechanism was in a position that prevented the door from closing. License Condition 2.C(5)(c) of the Callaway Plant Unit No. 1 Facility Operating License requires, in part, that the licensee implement and maintain in effect all provisions of the approved fire program. The fire protection program required that 3-hour rated fire doors remain closed if compensatory measures were not in place. The license condition was not met since the 3-hour fire barrier between the switchgear rooms was not intact and the licensee did not have compensatory measures in place. The licensee's failure to maintain in effect the provisions of the fire protection program was a violation of Operating License Condition 2.C(5)(c). This violation is being treated as a Non-Cited Violation consistent

with Section VI.A of the NRC Enforcement Policy. This violation was entered into the licensee's corrective action program as Suggestion/Occurrence/Solution 2000-0830 (50-483/0013-02).

This violation was evaluated using the significance determination process, which indicated that the violation had very low safety significance, because the door was ajar for less than 3 hours, the ignition frequency was relatively low, and the fire detection and suppression systems were minimally affected. Additionally, operations and security personnel routinely tour the area.

.5 Alternative Safe Shutdown Capability

a. Inspection Scope

The team performed a review to determine if the licensee had appropriate procedures in place and had identified the plant components and systems required to achieve and maintain safe shutdown conditions. The team reviewed the capability of the identified systems and components and the adequacy of the procedures that were identified as required to achieve alternative safe shutdown. The team then verified that procedures and system operating capabilities were adequate to perform plant cooldown to hot shutdown conditions from outside of the control room. The team's methodology was to focus on the overall adequacy of the identified systems, components, and use of procedures to perform actions necessary to increase core shutdown margin, control reactor pressure, provide reactor coolant makeup, and remove core decay heat. The team also verified the adequacy of process monitoring and needed support system functions.

b. Findings

No findings were identified.

.6 Operational Implementation of Alternative Shutdown Capability

a. Inspection Scope

The team performed a walkdown of all the actions in Procedure OTO-ZZ-00001, "Control Room Inaccessibility," Revision 17, which was the procedure for performing a plant alternative shutdown from outside the control room by local manipulation of equipment in the fire-protected Train B, and available Train A equipment that was not damaged by a fire or other conditions. The team also reviewed Procedure OTO-ZZ-00002, "Control Room Operations With a Fire," Revision 5, which provided instructions for actions to be taken for a control room fire not requiring control room evacuation. The team verified that the licensee's process had appropriately validated that operators could perform the required procedural actions within the identified applicable plant shutdown time requirements. In addition the team verified that equipment labeling was consistent with the procedure.

The team reviewed the training program for licensed and nonlicensed personnel to verify that it included training on the plant alternative safe shutdown capability. The review was performed to verify that operations personnel had been trained in the fire-related safe shutdown strategy as well the detailed actions required of the various licensed and non-licensed shift crew positions.

The team conducted interviews and performed reviews to verify that: (1) the licensee's configuration control program maintained the affected equipment in the appropriate lineup from which to initiate the alternative safe shutdown procedure, (2) the licensee conducted periodic operational surveillance tests of the plant alternative shutdown transfer capability, instrumentation, and control functions to demonstrate that the alternative shutdown capability would be functional upon demand, and (3) that tools and equipment needed by the operators (spare fuses, fuse pullers, special tools, flash lights, etc.) were appropriately located and periodically inventoried to assure availability when needed.

b. Findings

No findings were identified.

.7 Communications

a. Inspection Scope

The team reviewed the adequacy of the communications systems that supported plant personnel in the performance of alternative safe shutdown activities and fire brigade duties. Because the licensee credited the portable radios for post-fire safe shutdown actions that require prompt control room operator response, the team verified that radios and telephones were available and operational for emergency use by operators for implementation of alternative safe shutdown. The team also verified that the digital PBX telephone system which was referenced as an alternate means of communication in the licensee's procedure, was provided with redundant processors and power supplies. The team further verified that routine preventive maintenance was being done to assure that a sufficient number of radios were maintained and quickly available to support alternative safe shutdown from outside of the control room. Finally, the team verified that the normal communications system was adequately maintained by the licensee's preventive maintenance and corrective action programs.

b. Findings

No findings were identified.

.8 Emergency Lighting

a. Inspection Scope

The team reviewed the emergency lighting system required for safe shutdown activities throughout the plant to verify it would provide sufficient illumination for adequate access to safe shutdown equipment and the performance of manual actions required to achieve and maintain hot shutdown conditions. During the extensive walkdown and simulation of Procedure OTO-ZZ-00001, the team verified the adequacy of emergency lighting for performing each step as well as the illumination of access and egress routes. The team also reviewed surveillance test procedures, test results, and results trending for functional and battery-capacity testing of the emergency lighting system throughout the power block and ultimate heat sink structure which provided assurance that all of the individual emergency lights would function to supply illumination for the required 8-hour period.

b. Findings

No findings were identified.

.9 Cold Shutdown Repairs

a. Inspection Scope

The team reviewed the licensee's procedures to determine if any repairs were required to achieve cold shutdown. The team determined that because of modifications performed by the licensee to eliminate the need for installing electrical jumpers, the licensee did not require the repair of equipment to reach cold shutdown considering the safe shutdown methods used.

b. Findings

No findings were identified.

.10 Reactor Coolant Pump Oil Collection System

a. Inspection Scope

The team reviewed annunciator response procedures, a request for resolution, tank data book graphs, drawings, and the updated final safety analysis report to determine whether the design of the lubrication oil collection system for the reactor coolant pumps collected all oil leakage and spray from all potential leakage points. The team also discussed the system with licensee personnel.

b. Findings

No findings were identified.

.11 Compensatory Measures

a. Inspection Scope

The team reviewed a sample of the fire impairments in place during the inspection to verify that the compensatory measures for those impairments were appropriate. The team also reviewed compensatory measures posted for the NRC findings in Fire Areas 1-1A, A-18, and A-27 discussed above.

b. Findings

No findings were identified.

.12 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed a sample of suggestion-occurrence-solution reports, work requests, and corrective maintenance work orders listed in Attachment 1 for emergency lighting and safe shutdown communications equipment to verify that the licensee was identifying fire protection-related issues at an appropriate threshold and entering those issues into the corrective action program.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

40A6 Management Meetings

Exit Meeting Summary

The team debriefed Mr. M. Taylor, Manager, Nuclear Engineering, and other members of the licensee's staff on the preliminary inspection findings at the conclusion of the team's onsite inspection on August 25, 2000.

On August 31, 2000, the team leader briefed Mr. Taylor, and other licensee staff members concerning the results of the in-office review. The licensee's management acknowledged the findings presented.

A telephonic exit meeting was held on September 26, 2000, with Mr. M. Taylor, Manager, Nuclear Engineering, and other licensee staff members, during which the team leader characterized the results of the in-office review and the additional onsite inspection. The licensee's management acknowledged the findings presented.

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

ATTACHMENT 1

Supplemental Information

PARTIAL LIST OF PERSONS CONTACTED

Licensee

S. Bond, Supervisor, Engineering
K. Bruckerhoff, Fire Marshal
L. Eitel, Fire Protection Engineer
D. Hollabaugh, Superintendent, Design Engineering
J. Johnson, Fire Protection System Engineer
R. McCann, Electrical Engineer
M. Reidmeyer, Regional Regulatory Affairs Supervisor
D. Shafer, Supervisor, Engineering
P. Shannon, Operating Supervisor
M. Taylor, Manager, Nuclear Engineering

NRC

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

ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

50-483/0013-01	NCV	Failure to properly maintain in effect all provisions of their NRC-approved fire protection program in Fire Areas A-1A, A-18, and A-27 (Section 1R05.4).
50-483/0013-02	NCV	The licensee made changes to their approved fire protection program that adversely affected their ability to achieve and maintain safe shutdown in the event of a fire in Fire Areas A-1A, A-18, and A-27 (Section 1R05.4)

LIST OF DOCUMENTS REVIEWED

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

Calculations

Number	Description	Revision
NG-12	NG MCC Setpoint Calculation	3

Number	Description	Revision
NG-22	NG Load Center Setpoint Calculation	0

Drawings

Drawing Number	Title	Revision
E-2L1303	Lighting, Groundings & Communications Auxiliary & Reactor Buildings Plan EL. 2000'-0"	26
E-21001 (Q)	Main Single Line Diagram	9
E-21023 (Q)	Relay Setting Tabulation and Coordination Curves	0
E-21NK01 (Q)	Class IE 125V DC System Meter & Relay Diagram	6
E-21NK02 (Q)	Class IE 125V DC System Meter & Relay Diagram	6
M-22AL01	Auxiliary Feedwater System Piping and Instrumentation Drawing	17
M-22EF01	Essential Service Water System Piping and Instrumentation Drawing	34
M-22EF02	Essential Service Water System Piping and Instrumentation Drawing	41
M-2EG01	Component Cooling Water System Piping and Instrumentation Drawing	6
M-2EG02	Component Cooling Water System Piping and Instrumentation Drawing	11
M-2EG03	Component Cooling Water System Piping and Instrumentation Drawing	14
M-22GL01	Auxiliary Building Heating Ventilation and Air Conditioning Piping and Instrumentation Drawing	24
M-22GL02	Auxiliary Building Heating Ventilation and Air Conditioning Piping and Instrumentation Drawing	21
M-22BB04	Reactor Coolant System	12
M-22BG01	Chemical and Volume Control System	22
M-22BG03	Chemical and Volume Control System	44
M-22BM01	Steam Generator Blowdown System	23

Drawing Number	Title	Revision
M-22BN01	Borated Refueling Water Storage System	20
M-22EC01	Fuel Pool Cooling and Cleanup System	17
M-U2EF01	Essential Service Water System	39
M-22EF01	Essential Service Water System	34
M-22EF02	Essential Service Water System	41
M-22EG01	Component Cooling Water System	6
M-22EG02	Component Cooling Water System	11
M-22EG03	Component Cooling Water System	14
M-22EJ01	Residual Heat Removal System	39
M-22EM01	High Pressure Coolant Injection System	17
M-22EP01	Accumulator Safety Injection	10
M-22FC02	Auxiliary Feedwater Pump Turbine	15
M-U2GD01	Essential Service Water Pump House and Ultimate Heat Sink Electrical Room HVAC	9
M-22GK01	Control Building HVAC	11
M-22GK03	Control Building HVAC	16
M-22GL02	Auxiliary Building HVAC	21
M-22GM01	Diesel Generator Building HVAC	1

Procedures

Procedure Number	Title	Revision
FPP-ZZ-0001	Auxiliary Building Prefire Strategies, Fire Areas A-1, A-16, A-27, and C-5	9
EIP-ZZ-226	Fire Response Procedure for Callaway Plant	4
OTA-RL-RK035	Power Operated Relief Valve Open	3
APA-ZZ-00101	Procedure ,Preparation ,Review, and Approval	032
ETP-QF-03000	Plant Public Address System Test	
FPZ-ZZ-00009	Fire Protection Training Program	006
GT-870057	Plant Quarterly Gaitronics System Check for Off-Hook Stations	
GT-870058	Loop 8 Quarterly Gaitronics System Check for Off-Hook Stations	
OTO-ZZ-00001	Control Room Inaccessibility	017
OTO-ZZ-00002	Control Room Operations With a Fire	005

Requests for Resolution

Number	Description	Revision
4118	Evaluate ice vest cooler in MG set room in auxiliary building	D
2093	Reactor coolant pump Lube Oil Drain Tank A and B levels	B
06400	Evaluation of 20 foot separation zones	A
20572	Fire Area A-16	A

Suggestion-Occurrence-Solution Reports

89-011	98-1115	00-1338
98-0592	98-1116	00-1927
98-0726	98-3778	00-2013
98-0765	99-1634	00-2056
98-1099	99-3704	00-2070

Work Order and Post Maintenance Tasks

Number	Description	Date
P656869	Control Room Evacuation Equipment Check	07/23/00
P592675	Functional Test of Plant Gaitronics	04/24/98
P619537	Functional Test of Plant Gaitronics	09/27/99

Audits and Surveillances

Quality Assurance Department Audit Report AP00-03, “Quality Assurance Audit of Fire Protection (AP00-003),” dated May 18, 2000

Quality Assurance Department Audit Report AP98-009, “Quality Assurance Audit of Fire Protection,” dated December 22, 1998

Surveillance Report No. SP98-080, “Review of Fire Protection Corrective Actions and NRC Inspection Procedure Criteria,” dated September 8, 1998

Surveillance Report No. SP99-003, “Assess Performance of the Fire Brigade and Fire Brigade Leader during Unannounced Fire Drill 99U01,” dated February 1, 1999

Self Assessment SA00-NE-001, “Self Assessment of the Fire Hazards Analysis for the Emergency Diesel Generator Rooms,” dated April 20, 2000

Self Assessment SA00-OP-002, “Self Assessment of Unannounced Fire Drill,” dated June 9, 2000

Miscellaneous Documents

Callaway Plant Unit No. 1 Facility Operating License, Revision 014

Fire Preplan Manual, Revision 10

NUREG 0830, “Safety Evaluation Report related to the operation of Callaway Plant, Unit No. 1," October 1981

NUREG 0830, Supplement No. 3, “Safety Evaluation Report related to the operation of Callaway Plant, Unit No. 1," May 1984

Callaway Plant Unit No. 1 Final Safety Analysis Report, Revision 11

Tank Data Book, Pages 252 and 253, “Reactor Coolant Pump Lube Oil Drain Tank TLF01 A, B, Level Versus Volume and Tank Drawing”

Licensing Impact Review applicable to Request for Review 16916A, dated May 23, 1996

Formal Safety Evaluation, Procedure OTO-ZZ-00001, Revision 15

Formal Safety Evaluation, FSAR Change Notice 97-54

Control Room Night Order to Assure Availability of Portable Radios to Perform Post-Fire Safe Shutdown Following Control Room Evacuation dated August 22, 2000

Preventive Maintenance Trending Charts, Emergency Lighting Quarterly Functional Testing

Preventive Maintenance Trending Charts, Emergency Lighting Annual Conductance Testing

ATTACHMENT 2

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection Findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN Findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE Findings indicate issues that are of low to moderate safety significance. YELLOW Findings are issues that are of substantial safety significance. RED Findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin, but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner, which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.