UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

June 7, 2012

EA-12-111

Mr. Adam C. Heflin, Senior Vice
President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT (05000483/2012007) AND EXERCISE OF ENFORCEMENT DISCRETION

Dear Mr. Heflin:

On May 3, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Callaway Plant. The enclosed inspection report documents the inspection results, which were discussed in an exit meeting on May 3, 2012, with Mr. D. Neterer, Plant Director, 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.

One NRC-identified finding of very low safety significance (Green) was identified during this inspection. Additionally, one finding involving 10 CFR 50.48(b) was identified and was a violation of NRC requirements. The inspectors have screened this violation and determined that it warrants enforcement discretion per the Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues and Section 11.05(b) of Inspection Manual Chapter 0305 (EA-12-111).

If you contest any non-cited violation in this report, you should provide a written 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, D.C. 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Senior 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, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room). To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

Sincerely,

/RA/

Geoffrey Miller, Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure: Inspection Report No. 05000483/2012007
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	05000483
License:	NPF-30
Report No:	05000483/2012007
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	April 16 to May 3, 2012
Team Leader:	S. Graves, Senior Reactor Inspector, Engineering Branch 2
Inspectors:	S. Alferink, Reactor Inspector, Engineering Branch 2 E. Uribe, Reactor Inspector, Engineering Branch 2 M. Young, Reactor Inspector, Engineering Branch 1
Approved by:	Geoffrey Miller, Chief Engineering Branch 2 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000483/2012007; 04/16/2012 — 05/04/2012; Callaway Plant; Triennial Fire Protection Team Inspection.

The report covered a two-week triennial fire protection team inspection by specialist inspectors from Region IV. One Green finding was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process (SDP) does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. The team identified a finding for the failure to establish preventive maintenance of local transfer/isolation switch JEHS0021A, "B D/G Fuel Oil Transfer Pump Iso/Run" for the train B emergency diesel generator fuel oil transfer pump in procedures covering fire protection program implementation. As a result, the licensee failed to ensure that the local control circuit for the fuel oil transfer pump would be isolated from the effects of fire damage caused by a control room fire. The train B emergency diesel generator was the credited alternative ac power supply for the control room fire scenario. The licensee entered this deficiency into their corrective action program as Callaway Action Request System 201202931 to establish preventive maintenance for this component.

The failure to establish preventive maintenance on local transfer/isolation switch JEHS0021A, "B D/G Fuel Oil Transfer Pump Iso/Run" in procedures covering fire protection program implementation was a performance deficiency. Specifically, the licensee failed to ensure that component specific isolation/run switch testing procedures existed and ensured circuit isolation and transfer of control from the control room in the event of a fire. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected fire protection defense in depth strategies involving post fire safe shutdown. Using Appendix F, Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements," the team assigned a low degradation rating to the finding because the capability to achieve safe shutdown in the event of a control room fire would be minimally impacted by the failure to establish a preventive maintenance procedure for the train B emergency diesel generator fuel oil transfer pump local transfer/isolation switch. Because this finding had a low degradation rating, it screened as having very low safety significance (Green). The finding did not have a cross-cutting aspect because it was not indicative of current performance since the performance deficiency existed for more than three years. (Section 1R05.05.1)

B. Licensee-Identified Violations

None.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R05 Fire Protection (71111.05T)

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure 71111.05T, "Fire Protection (Triennial)," effective January 1, 2012, at the Callaway Plant. The licensee committed to adopt a risk informed fire protection program in accordance with National Fire Protection Association Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," but had not yet completed the program transition. The inspection team evaluated the implementation of the existing approved fire protection program in selected risk-significant areas, with an emphasis on the procedures, equipment, fire barriers, and systems that ensure the post-fire capability to safely shutdown the plant.

Inspection Procedure 71111.05T requires the selection of three to five fire areas for review. The inspection team used the fire hazards analysis section of the Callaway Plant Individual Plant Examination of External Events and inputs from Callaway's NFPA-805 license amendment request Fire Probabilistic Risk Assessment to select the following four risk significant fire areas (inspection samples) for review:

- Fire Area A-21 Control Room AC and Filtration Units Room (Room 1501).
- Fire Area C-9 ESF Switchgear Room (North) (Room 3301).
- Fire Area C-27 Control Room Area.
- Fire Area T-2 Turbine Building 50 feet North of Auxiliary Building Wall, General Area.

The inspection team evaluated the licensee's fire protection program using the applicable requirements, which included plant Technical Specifications, Operating License Condition 2.C.(5), NRC safety evaluation report and supplemental safety evaluation reports, 10 CFR 50.48, and Branch Technical Position 9.5-1. The team also reviewed related documents that included the Final Safety Analysis Report (FSAR), Section 9.5; the fire hazards analysis; and the post-fire safe shutdown analysis.

Specific documents reviewed by the team are listed in the attachment. Four inspection samples were completed.

.01 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the piping and instrumentation diagrams, safe shutdown equipment list, safe shutdown design basis documents, and the post-fire safe shutdown analysis to verify that the licensee properly identified the components and systems necessary to achieve and maintain safe shutdown conditions for fires in the selected fire areas. The team observed walkdowns of the procedures used for achieving and maintaining safe

shutdown in the event of a fire to verify that the procedures properly implemented the safe shutdown analysis provisions.

For each of the selected fire areas, the team reviewed the separation of redundant safe shutdown cables, equipment, and components located within the same fire area. The team also reviewed the licensee's method for meeting the requirements of 10 CFR 50.48; Branch Technical Position 9.5-1, Appendix A; and 10 CFR Part 50, Appendix R, Section III.G. Specifically, the team evaluated whether at least one post-fire safe shutdown success path remained free of fire damage in the event of a fire. In addition, the team verified that the licensee met applicable license commitments.

b. Findings

No findings were identified.

.02 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe the material condition and configuration of the installed fire area boundaries (including walls, fire doors, and fire dampers) and to verify that the electrical raceway fire barriers were appropriate for the fire hazards in the area. The team compared the installed configurations to the approved construction details, supporting fire tests, and applicable license commitments.

The team reviewed installation, repair, and qualification records for a sample of penetration seals to ensure the fill material possessed an appropriate fire rating and that the installation met the engineering design. The team also reviewed similar records for the rated fire wraps to ensure the material possessed an appropriate fire rating and that the installation met the engineering design. The team also held discussions with Fire Protection staff to address the integrity of fire protection coatings that had been subjected to prolonged exposure to moisture.

b. Findings

No findings were identified.

.03 Active Fire Protection

a. Inspection Scope

The team reviewed the design, maintenance, testing, and operation of the fire detection and suppression systems in the selected fire areas. The team verified the manual and automatic detection and suppression systems were installed, tested, and maintained in accordance with the National Fire Protection Association code of record or approved deviations, and that each suppression system was appropriate for the hazards in the selected fire areas.

The team walked down accessible portions of the detection and suppression systems in the selected fire areas. The team also walked down major system support equipment in

other areas (e.g., fire pumps and Halon supply systems) to assess the material condition of these systems and components.

The team reviewed the electric fire pump flow tests, pressure tests, and data trending to verify that the pump met its design requirements. The team reviewed the testing of the flow characteristics (Hazen-Williams coefficient) of the fire protection piping used to monitor for system degradation. The team also reviewed the Halon suppression system functional tests to verify that the system capability met the design requirements.

The team assessed the fire brigade capabilities by reviewing training and qualification. The team also reviewed pre-fire plans and smoke removal plans for the selected fire areas to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation and to facilitate suppression of a fire that could impact post-fire safe shutdown capability. In addition, the team inspected fire brigade equipment to determine operational readiness for fire fighting. On May 1, 2012, the team observed a training scenario where the fire brigade connected the fire main water supply to the onsite fire/tanker truck, and demonstrated the ability to provide adequate flow through fire hoses in an elevated recirculation loop configuration.

b. Findings

No findings were identified.

.04 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed plant walk downs and document reviews to verify that redundant trains of systems required for hot shutdown, which are located in the same fire area, would not be subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team verified that:

- A fire in one of the selected fire areas would not directly, through production of smoke, heat, or hot gases, cause activation of suppression systems that could potentially damage all redundant safe shutdown trains.

- A fire in one of the selected fire areas or the inadvertent actuation or rupture of a fire suppression system would not directly cause damage to all redundant trains (e.g., sprinkler-caused flooding of other than the locally affected train).

- Adequate drainage is provided in areas protected by water suppression systems.

b. Findings

No findings were identified.

.05 Alternative Shutdown Capability

a. Inspection Scope

Review of Methodology

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentation drawings, electrical drawings, the Final Safety Analysis Report, and other supporting documents to verify that hot and cold shutdown could be achieved and maintained from outside the control room for fires that require evacuation of the control room, with or without offsite power available.

Plant walkdowns were conducted to verify that the plant configuration was consistent with the description contained in the safe shutdown and fire hazards analyses. The team focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor decay heat removal, process monitoring instrumentation, and support systems functions.

The team also verified that the systems and components credited for shutdown would remain free from fire damage. Finally, the team verified that the transfer of control from the control room to the alternative shutdown location would not be affected by fire-induced circuit faults (e.g., by the provision of separate fuses and power supplies for alternative shutdown control circuits).

Review of Operational Implementation

The team verified that the licensed and non-licensed operators received training on alternative shutdown procedures. The team also verified that sufficient personnel to perform a safe shutdown are trained and available onsite at all times, exclusive of those assigned as fire brigade members.

A walkthrough of the post-fire safe shutdown procedure with licensed and non-licensed operators was performed to determine the adequacy of the procedure and ensure the implementation and human factors adequacy of the procedure. The team verified that the operators could be reasonably expected to perform specific actions within the time required to maintain plant parameters within specified limits. Time critical actions that were verified included restoring electrical power, establishing control at the remote shutdown and local shutdown panels, establishing reactor coolant makeup, and establishing decay heat removal.

The team reviewed manual actions to ensure that they had been properly reviewed and approved and that the actions could be implemented in accordance with plant procedures in the time necessary to support the safe shutdown method for each fire area.

The team also reviewed the periodic testing of the alternative shutdown transfer capability and instrumentation and control functions to verify that the tests are adequate to demonstrate the functionality of the alternative shutdown capability.

b. Findings

.1 Introduction. The team identified a finding of very low safety significance (Green) for the failure to establish preventive maintenance of local transfer/isolation switch JEHS0021A, "B D/G Fuel Oil Transfer Pump Iso/Run" for the train B emergency diesel generator fuel oil transfer pump in procedures covering fire protection program implementation. As a result, the licensee failed to ensure that the local control circuit for the fuel oil transfer pump would be isolated from the effects of fire damage caused by a control room fire.

Description. In the event the control room must be evacuated due to a fire, the operators must transfer control of post-fire safe shutdown equipment from the control room to the auxiliary shutdown panel and other locations in the plant as directed by Procedure OTO-ZZ-00001, "Control Room Inaccessibility," Revision 35. Alignment for alternative shutdown operation is accomplished, in part, via a series of isolation/run switches that: (1) transfer control of selected equipment to the alternate shutdown panel, (2) reposition selected components to the desired post-fire safe shutdown position, and (3) isolate the control room portions of the circuits from the effects of a fire. The isolation function was required to ensure that fire damage would not prevent operation of equipment needed to achieve and maintain safe shutdown conditions in the event a fire forces evacuation of the control room.

The team reviewed the licensee's list of components required for achieving and maintaining hot shutdown conditions for post-fire safe shutdown scenarios, which included the emergency diesel generator fuel oil transfer pumps. The team reviewed recent maintenance for these components and identified that hand switch JEHS0021A, "B D/G Fuel Oil Transfer Pump Iso/Run" was not included in the maintenance procedures and had not had preventive maintenance performed. The failure to perform preventive maintenance of the isolation function of the system could result in the failure to electrically isolate the control circuit of the train B emergency diesel generator fuel oil transfer pump from the control room in the event of a fire. The train B emergency diesel generator was the credited alternative ac power supply for control room fire scenarios.

Analysis. The failure to establish preventive maintenance on local transfer/isolation switch JEHS0021A, "B D/G Fuel Oil Transfer Pump Iso/Run" in procedures covering fire protection program implementation was a performance deficiency. Specifically, the licensee failed to ensure that component specific isolation/run switch testing procedures existed and ensured circuit isolation and transfer of control from the control room in the event of a fire. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected fire protection defense in depth strategies involving post fire safe shutdown. Using Appendix F, Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements," the team assigned a low degradation rating to the finding because the capability to achieve safe shutdown in the event of a control room fire would be minimally impacted by the failure to establish a preventive maintenance procedure for the train B emergency diesel generator fuel oil transfer pump local transfer/isolation switch. Because this finding had a low degradation rating, it screened as having very

low safety significance (Green). The finding did not have a cross-cutting aspect because it was not indicative of current performance since the performance deficiency existed for more than three years.

Enforcement. Enforcement action does not apply because the finding did not involve a violation of regulatory requirements. The licensee entered this deficiency into their corrective action program as Callaway Action Request System 201202931. Because the finding did not involve a violation of regulatory requirements and had very low safety significance (Green), it is identified as a Finding: FIN 05000483/2012007-01, Failure to Establish Preventive Maintenance for Equipment Used to Achieve Post-Fire Safe Shutdown.

.2 Introduction. The following violation that affects 10 CFR 50.48 was identified by the NRC and is a violation of NRC requirements. This violation has been screened and determined to warrant enforcement discretion per Section 9.1 of the Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)."

The team identified a violation of Technical Specification 5.4.1.d for the failure to implement and maintain adequate written procedures covering fire protection program implementation. Specifically, the team identified three examples where the licensee failed to maintain an alternative shutdown procedure that ensured operators could safely shut down the plant in the event of a control room fire.

Description. Operations personnel would use Procedure OTO-ZZ-00001, "Control Room Inaccessibility," Revision 35, to shut down the reactor at the auxiliary shutdown panel and other control stations outside of the control room in the event a fire required evacuation of the control room. This procedure provided alternative methods to maintain post-fire safe shutdown functions, including reactor coolant inventory and decay heat removal. The procedure controlled reactor coolant inventory by using the train B charging pump and controlled decay heat removal by isolating main feedwater and then using auxiliary feedwater to supply two of the four steam generators.

The team performed a timed walkdown of the alternative shutdown procedure, and based on the walkdown results, the team identified three alternative shutdown scenarios where the procedure failed to provide operators with appropriate instructions. In the first scenario, the procedure failed to ensure that operators would control charging flow prior to overfilling the pressurizer after a safety injection signal. In the second scenario, the procedure failed to ensure that operators would prevent the drain down of the refueling water storage tank to the containment sump. In the final scenario, the procedure failed to ensure that operators would isolate main feedwater and control auxiliary feedwater prior to overfilling the steam generators.

Scenario 1: Potential Overfilling of the Pressurizer

The first example involved a control room fire with the spurious actuation of a single pressurizer power-operated relief valve. In this scenario, the open power-operated relief valve rapidly depressurizes the reactor coolant system and a safety injection signal occurs within one minute of the reactor trip. The resulting safety injection actuation causes both safety-related charging pumps to start and both boron injection header inlet isolation valves to open. The alternative shutdown procedure provided instructions for operators to control pressurizer level by throttling the train B boron injection header inlet

isolation valve (EM HV-8803B). The team determined this action would not be successful if the train A boron injection header inlet isolation valve (EM HV-8803A) also opened and both charging pumps were running, as expected, due to the safety injection signal. The team noted that the alternative shutdown procedure provided steps for operators to de-energize boron injection header inlet isolation valve EM HV-8803A, but did not provide steps to ensure the valve was closed.

AREVA document, "Evaluation of Alternate Shutdown Manual Actions, Transient Analyses, and Operator Actions to Address NRC URI 2003007-02," dated June 9, 2005, contained the results for the licensee's current thermal hydraulic analysis for control room fire scenarios. This analysis indicated that the charging pumps should be stopped within 35 minutes to prevent overfilling the pressurizer. The team determined that operators would not be able to control charging flow to the pressurizer until they stopped the train A charging pump, which occurred at approximately 39 minutes.

Scenario 2: Potential Drain Down of the Refueling Water Storage Tank

The second example involved a control room fire with the spurious opening of the train A containment recirculation sump isolation valve (EJ HV-8811A). In this scenario, the open isolation valve results in the drain down of the refueling water storage tank to the containment sump. The refueling water storage tank was the credited source of water for the charging pump during an alternative shutdown.

The approved fire protection program specified that operators would de-energize and manually close the train A refueling water storage tank isolation valve (BN HV-8812A) to prevent draining the refueling water storage tank. The team noted that the alternative shutdown procedure provided steps to de-energize the valve, but did not provide steps to close the valve, which would be required to prevent draining the tank.

The licensee had removed the procedure steps to manually close valve BN HV-8812A in Revision 23 to OTO-ZZ-00001 based on an analysis that the electrical interlock permissive between valves BN HV-8812A and EJ HV-8811A would not be affected by the control room fire. The team determined that the permissive between the valves could be affected by a control room fire, and the removal of the steps to manually close valve BN HV-8812A was an adverse change to a procedure covering fire protection program implementation.

Scenario 3: Potential Overfilling of the Steam Generators

The third example involved a control room fire with the failure to close the main steam isolation valves prior to evacuating the control room. In this scenario, the turbine-driven main feedwater pumps continue to inject feedwater into the steam generators, potentially overfilling the steam generators resulting in the loss of decay heat removal capability. Feedwater overflow into the main steam lines could also disable the turbine-driven auxiliary feedwater pump, which was relied upon, in part, for post-fire safe shutdown decay heat removal.

The alternative shutdown procedure directed operators to close the main steam isolation valves from the control room before evacuation; however, the team determined that the approved fire protection program did not credit this action. The procedure also directed operators to de-energize the main feedwater isolation system cabinets as the backup

action after evacuation, which would ensure the main steam isolation valves and main feedwater isolation valves were closed. The licensee's analysis indicated that main feedwater should be isolated within 8.2 minutes to preclude overfilling the steam generators and overcooling the plant. The team determined that this backup action required approximately 11 minutes to complete, which could result in overfilling the steam generators.

Analysis. The failure to maintain adequate written procedures covering fire protection program implementation was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

A senior reactor analyst performed a Phase 3 evaluation to bound the risk significance of this finding because it involved an alternative shutdown scenario. The team determined that fires in the control room were the only fires that could lead to an alternative shutdown scenario. The senior reactor analyst performed a bounding analysis using values from NUREG/CR-6850, "EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities," September 2005, for the fire ignition frequencies and non-suppression probabilities. Since the change in core damage frequency was demonstrated to be less than 1E-4, the senior reactor analyst concluded that the finding was not of high safety significance (Red). Therefore, this finding qualifies for enforcement discretion using section 9.1 of the Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)."

The finding did not have a cross-cutting aspect because it was not indicative of current performance since the performance deficiency existed for more than three years.

Enforcement. Technical Specification 5.4.1.d requires that written procedures shall be established, implemented, and maintained covering fire protection program implementation. Contrary to this requirement, from March 16, 2006, to May 4, 2012, the licensee failed to establish, implement, and maintain written procedures covering fire protection program implementation. Specifically, the team identified three examples involving: 1) potential overfilling of the pressurizer; 2) potential draindown of the refueling water storage tank; and 3) potential overfilling of the steam generators, where the licensee failed to maintain an alternative shutdown procedure that ensured operators could safely shut down the plant in the event of a control room fire.

Because the licensee committed to adopting National Fire Protection Association Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," and has committed to changing their fire protection program license basis to comply with 10 CFR 50.48(c) by submitting a license amendment request to the NRC, this violation is eligible for enforcement discretion as described in Section 9.1 of the Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)." Under this interim Enforcement Policy, the NRC will normally not take enforcement action for a violation of 10 CFR 50.48(b) (or the requirements in a fire protection license condition) involving a problem in an area such as engineering, design, implementing procedures, or installation if the violation is documented in an inspection report and meets all of the following criteria:

- The licensee identified the violation as a result of a voluntary initiative to adopt the risk-informed, performance-based fire protection program under 10 CFR 50.48(c), or, if the NRC identified the violation, the NRC found it likely that the licensee would have identified the violation in light of the defined scope, thoroughness, and schedule of its transition to 10 CFR 50.48(c).

- The licensee corrected the violation or will correct the violation after completing its transition to 10 CFR 50.48(c). Also, the licensee took immediate corrective action or compensatory measures or both within a reasonable time commensurate with the risk significance of the issue following identification; this action should involve expanding the initiative, as necessary, to identify other issues caused by similar root causes.

- Routine licensee efforts, such as normal surveillance or quality assurance activities, were not likely to have previously identified the violation.

- The violation was not willful.

- The violation is not associated with a finding of high safety significance.

Specifically, the team determined that the licensee: (1) would have identified the violation in light of the defined scope, thoroughness, and schedule of its transition to 10 CFR 50.48(c) because the licensee had performed a new thermal hydraulic analysis and developed a new alternative shutdown procedure for the transition to NFPA-805; (2) the licensee will correct the violation after completing its transition to 10 CFR 50.48(c) and took immediate corrective action or compensatory measures or both within a reasonable time commensurate with the risk significance of the issue following identification. The licensee entered these issues into their corrective action program as CARS 201203377 and implemented appropriate compensatory measures, (3) routine licensee efforts (such as normal surveillance or quality assurance activities), were not likely to have previously identified the violation; (4) the violation was not willful; and (5) the team determined that this violation was not of high safety significance (Red).

Since all the criteria for enforcement discretion were met, the NRC is exercising enforcement discretion for this issue.

.06 Circuit Analysis

a. Inspection Scope

The team reviewed the post-fire safe shutdown analysis to verify that the licensee identified the circuits that may impact the ability to achieve and maintain safe shutdown. The team verified, on a sample basis, that the licensee properly identified the cables for equipment required to achieve and maintain hot shutdown conditions in the event of a fire in the selected fire areas. The team verified that these cables were either adequately protected from the potentially adverse effects of fire damage or were analyzed to show that fire induced circuit faults (e.g., hot shorts, open circuits, and shorts to ground) would not prevent safe shutdown. The team reviewed the circuits associated with the following components:

- BBPCV455A and 456A, Pressurizer Power-Operated Relief Valves.
- BBHV8000A and 8000B, Pressurizer Power-Operated Relief Block Valves.
- ADLV0079BA and 79BB, Hotwell Makeup Control Valves.
- ALHV0005, 0007, 0009, and 0011, Auxiliary Feedwater Pumps Discharge Valves.

For this sample, the team reviewed electrical elementary and block diagrams and identified power, control, and instrument cables necessary to support their operation. In addition, the team reviewed cable routing information to verify that fire protection features were in place as needed to satisfy the separation requirements specified in the fire protection license basis. The team also reviewed circuit coordination studies for the safety-related 4160 volt emergency bus.

b. Findings

No findings were identified.

.07 Communications

a. Inspection Scope

The team inspected the contents of designated emergency storage lockers and reviewed the alternative shutdown procedure to verify that portable radio communications and fixed emergency communications systems were available, operable, and adequate for the performance of designated activities. The team verified the capability of the communication systems to support the operators in the conduct and coordination of their required actions. The team also verified that the design and location of communications equipment such as repeaters and transmitters would not cause a loss of communications during a fire.

b. Findings

No findings were identified.

.08 Emergency Lighting

a. Inspection Scope

The team reviewed the portion of the emergency lighting system required for alternative shutdown to verify that it was adequate to support the performance of manual actions required to achieve and maintain hot shutdown conditions and to illuminate access and egress routes to the areas where manual actions would be required. The team evaluated the locations and positioning of the emergency lights during a walkthrough of the alternative shutdown procedure.

The team verified that the licensee installed emergency lights with an 8-hour capacity, maintained the emergency light batteries in accordance with manufacturer recommendations, and tested and performed maintenance in accordance with plant procedures and industry practices.

b. Findings

No findings were identified.

.09 Cold Shutdown Repairs

a. Inspection Scope

The team verified that the licensee identified repairs needed to reach and maintain cold shutdown and had dedicated repair procedures, equipment, and materials to accomplish these repairs. Using these procedures, the team evaluated whether these components could be repaired in time to bring the plant to cold shutdown within the time frames specified in their design and licensing bases. The team verified that the repair equipment, components, tools, and materials needed for the repairs were available and accessible on site.

b. Findings

No findings were identified.

.10 Compensatory Measures

a. Inspection Scope

The team verified that compensatory measures were implemented for out-of-service, degraded, or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g., detection and suppression systems and equipment; passive fire barriers; or pumps, valves, or electrical devices providing safe shutdown functions). The team also verified that the short-term compensatory measures compensated for the degraded function or feature until appropriate corrective action could be taken and that the licensee was effective in returning the equipment to service in a reasonable period of time.

b. Findings

No findings were identified.

.11 Review and Documentation of Fire Protection Program Changes

a. Inspection Scope

The team reviewed a sample of design change packages and program change evaluations (Generic Letter 86 -10 evaluations) which were determined to impact fire protection and post-fire safe shutdown performed since the last triennial inspection, to determine that the changes did not constitute an adverse effect on the ability to safely shutdown.

b. Findings

No findings were identified.

.12 Control of Transient Combustibles and Ignition Sources

a. Inspection Scope

The team performed a review of the licensee's Control of Combustible Materials Procedure, APA-ZZ-00741, Revision 23, to determine the requirements for storage and handling of combustible materials. The team reviewed Procedure APA-ZZ-00742, "Control of Ignition Sources," Revision 22, to determine the licensee's method of control of ignition sources such as welding, cutting, grinding and open flame work. The team performed walkdowns to determine if the requirements were being met.

b. Findings

No findings were identified.

.13 B.5.b Inspection Activities

a. Inspection Scope

The team reviewed implementation of guidance and strategies intended to maintain or restore core, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant resulting from explosions or fire as required by Section B.5.b of the Interim Compensatory Measures Order, EA-02-026, dated February 25, 2002, and 10 CFR 50.54(hh)(2).

The team reviewed the strategies to verify that they continued to maintain and implement procedures, maintain and test equipment necessary to properly implement the strategies, and ensure station personnel were knowledgeable and capable of implementing the procedures. The team performed a visual inspection of portable equipment used to implement the strategy to ensure the availability and material readiness of the equipment, including the adequacy of transportation of portable equipment with associated attachments. The team assessed the offsite ability to obtain fuel for the portable pump and foam used for firefighting efforts. The team completed one sample by reviewing the "Filling Spent Fuel Pool – External Strategy with Portable Pump" strategy described in Procedure EC Supp Guide, "Emergency Coordinator Supplemental Guideline," Revision 11.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES [OA]

4OA2 Identification and Resolution of Problems

Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team selected a sample of condition reports associated with the licensee's fire

protection program to verify that the licensee had an appropriate threshold for identifying deficiencies. In addition the team reviewed the corrective actions proposed and implemented to verify that they were effective in correcting identified deficiencies. The team also evaluated the quality of recent engineering evaluations through a review of condition reports, calculations, and other documents during the inspection.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The team presented the inspection results to Mr. D. Neterer, Plant Director, and other members of the licensee staff at an exit meeting on May 3, 2012. The licensee acknowledged the findings presented.

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

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Hall	Manager, Engineering Systems
D. Neterer	Plant Director
J. Bollinger	Engineer
L. Eitel	Supervisor, Balance of Plant Systems Engineering
L. Graessle	Director, Plant Support
L. Kanuckel	Manager, Engineering Design
M. Covey	Assistant Manager, Operations
M. Fletcher	Regulatory Affairs
N. Turner	Coordinator, Emergency Preparedness
R. McCann	Engineer
R. Wink	Supervisor, Regulatory Affairs
S. Cantrell	Fire Protection Program Engineer
S. Petzel	Engineer, Regulatory Affairs
S. Sandbothe	Manager, Regulatory Affairs

NRC

D. Dumbacher, Senior Resident Inspector
T. Hartman, Senior Resident Inspector
Z. Hollcraft, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened
None.

Opened and Closed

05000483/2012007-01	FIN	Failure to Establish Preventive Maintenance for Equipment Used to Achieve Post-Fire Safe Shutdown (1R05.05)

Closed
None.

LIST OF DOCUMENTS REVIEWED

CALCULATIONS

Number	Title	Revision
BN-22	Reactor Water Storage Tank Drain-down Time to the Containment Sump Due to Fire Induced Failure of Residual Heat Removal Valve EJHV8811A or EJHV8811B	0
M-KC-316	Fire Protection System Hydraulic Calculations	1
KC-05, Addenda 2	Firewater Flow to Auxiliary Building Cable Trays EL. 1974'	0
KC-12	Minimum Firewater Storage Tank Level Necessary to Maintain the Net Positive Suction Head (NPSH) Requirements for Fire Pumps	1
KC-12, Addendum 1	Minimum Firewater Storage Tank Level Necessary to Maintain the Net Positive Suction Head (NPSH) Requirements for Fire Pumps	0
	Evaluation of Alternate Shutdown Manual Actions, Transient Analyses and Operator Timelines to Address NRC URI 2003007-02	0
KC-26	Nuclear Safety Capability Assessment	0

DRAWINGS

Number	Title	Revision
11 874 334	Operation of Engine Without Cooling Water SNUPPS	2
13952N	Local Control Panel RP-118 Details Auxiliary Shutdown Panel	NA
8600-X-88164	Schematic Diagram Exhaust Fans Fire Protection System	9
8600-X-88199	Schematic Diagram Electric Fire Pump and 480V Alarms Fire Protection System	12
8600-X-88938	Piping Isometrics – Fire Pumphouse Fire Protection System	16
8600-X-89633	Firewater Makeup Pump PKC1004 and Storage Tanks TKC 1001A and B	15
8600-X-89634	Diesel Driven Fire Pump PKC1002A	7
8600-X-89635	Diesel Driven Fire Pump PKC1002B	7

Number	Title	Revision
8600-X-89636	Fire Pump PKC1001A and Freeze Protection Pumps PKC1005A and B	9
8600-X-89637	Fire Pump PKC1003 and Air Compressor CKC1001 and Accumulator TKC1002	10
8600-X-89638	Yard Fire Loop	6
8600-X-89639	Yard Fire Loop	17
8600-X-89640	Yard Fire Loop	6
8600-X-89641	Yard Fire Loop	20
8600-X-90327	Fire Protection System Yard Layout and Pumphouse One Line Diagram	13
8600-X-90328	Fire Protection System Yard Layout One Line Diagram	8
90027 NS	Fire Protection System Fire Water Storage Tank General Plan	NA
A-2802	Architectural Fire Delineation Floor Plan, EL. 2000’	12
A-2804	Architectural Fire Delineation Floor Plan, EL. 2047’-6”	25
A-2806	Architectural Fire Delineation Floor Plan, Turbine Building – EL. 1983’-0” and 2000’-0”	6
A-2807	Architectural Fire Delineation Floor Plan, Turbine Building – EL. 2033’-0” and 2065’-0”	4
A-2809	Architectural Fire Delineation Sections A and B	1
A-2810	Architectural Fire Delineation Sections C, D, E, F and J	3
A-2811	Architectural Fire Delineation Sections G and H	0
A-2812	Architectural Fire Delineation Floor Plan, Turbine Building – EL. 2015’-4”	2
A-2815	Twenty Foot Separation Zones Auxiliary and Reactor Buildings Floor Plan – EL. 2047’-6”	3
DS-C-67970-13, S001	Solenoid Assembly (Power Operated Relief Valve)	0
DS-C-67970-13, S002	Solenoid Assembly (Power Operated Relief Valve)	1
DS-C-67970-13, S003	Solenoid Assembly (Power Operated Relief Valve)	2
E-018-00012	Motor Control Center Layout (NG04C)	23

Number	Title	Revision
E-018-00013	Motor Control Center Layout (NG04C)	30
E-21001	Main Single Line Diagram	12
E-23AD06	Schematic Diagram, Condensate System Indicators, Annunciators and Computer Points	2
E-23AD07	Schematic Diagram, Condensate System Miscellaneous Indicating Lights and Computer Points	2
E-23AL01B	Schematic Diagram, Motor Driven Auxiliary Feedwater Pump B	6
E-23AL03B	Aux. Feedwater Pumps, Discharge Control-Motor Operated Valves	5
E-23AL09	Miscellaneous Circuits	5
E-23BB39A	Schematic Diagram Pressurizer Relief Isolation	0
E-23BB40	Schematic Diagram Power Relief Valves	3
E-2C8900	Communications Systems Notes, Symbols, and Details	51
E-2F1501	Fire Detection/Protection System – Auxiliary Building EL. 2047'-6"	4
E-2F3301	Fire Detection/Protection System Control Building, Diesel Generator Building and Communications Corr. – EL. 2000' and 2016'	12
E-2F3302	Lighting, Grounding and Communications Comm. Corr., Cont. and Diesel Gen Building – EL. 2000' and 2016'	30
E-2F8900	Fire Detection/Protection System Notes, Symbols, and Details	5
E-2L1101	Lighting, Grounding and Communications Auxiliary and Reactor Buildings EL. 1974'-0"	14
E-2L1303	Lighting, Grounding and Communications Auxiliary and Reactor Buildings EL. 2000'-0"	33
E-2L1404	Lighting, Grounding and Communications Auxiliary and Reactor Buildings EL. 2026'-0"	33
E-2L1505	Lighting, Grounding and Communications Auxiliary and Reactor Buildings EL. 2047'-6" and 2047'-2"	39
E-2L3302	Lighting, Grounding and Communications Comm. Corr. Cont. and Diesel Generator Building EL. 2000' and 2016'	29

Number	Title	Revision
E-2L3503	Lighting, Grounding, and Communications – Containment and Diesel Generators Building Plan EL 2032' and EL 2073'-6"	20
E-2L9900	Lighting Panel Schedule Panel No. QA11	97
E-2R1321	Raceway Plan Auxiliary Building Area-2 EL. 2000'	3
E-2R1341	Raceway Plan Auxiliary Building Area-4 EL. 2000'	3
E-2R1423B	Exposed Conduit Auxiliary Building Area-2 EL. 2026'	18
E-2R1423D	Exposed Conduit Auxiliary Building Area-2 EL. 2026'	10
E-2R1433A	Exposed Conduit Auxiliary Building Area-3 EL. 2026'	8
E-2R1433B	Exposed Conduit Auxiliary Building Area-3 EL. 2026'	11
E-2R1433C	Exposed Conduit Auxiliary Building Area-3 EL. 2026'	5
E-2R1441	Raceway Plan Auxiliary Building Area-4 EL. 2026'	8
E-2R1521	Exposed Conduit Auxiliary Building Area-2 EL. 2047'-6"	2
E-2R1523A	Exposed Conduit Auxiliary Building Area-2 EL. 2047'-6"	3
E-2R1523B	Exposed Conduit Auxiliary Building Area-2 EL. 2047'-6"	5
E-2R1523C	Exposed Conduit Auxiliary Building Area-2 EL. 2047'-6"	2
E-2R1523D	Exposed Conduit Auxiliary Building Area-2 EL. 2047'-6"	7
E-2R3411	Raceway Plan Control Building Area-1 EL. 2016'	7
E-2R3511	Raceway Plan Control Building Area-1 EL. 2032'	7
E-2R3512	Raceway Plan Control Building Area-1 EL. 2032'-0"	6
E-2R4251	Exposed Conduit Turbine Building Area-5 EL. 1983'	9
E-2R4312	Exposed Conduit Turbine Building Area-1 EL. 2000'	21
E-2R4342	Exposed Conduit Turbine Building Area-4 EL. 2000'	9
J-110-00119	Instrument Loop Diagram Condensate System Hotwell Level Control	8
J-601A-00165	Wiring Diagram	9
J-601A-00176	Basic Modutronic 10A Schematic	1
M-22AD01	P&ID – Condensate System	17
M-22AL01	P&ID - Auxiliary Feedwater System	36
M-22AP01	P&ID – Condensate Storage and Transfer System	28

Number	Title	Revision
M-23AP02	Piping Isometric Condensate Storage and Transfer, Turbine Building	4
M-2X0339	Blockwall Elevations Penetration Closure Control Building and Communication Corridor	6
M-2X1902	Auxiliary Building Penetration Closure Wall Elevation Sheet 2	3
M-2X3311	Control Building Area 1 Penetration Closure Plan Floor EL. 2000’	3
M-2X3411	Control Building Area 1 Penetration Closure Plan Floor EL. 2016’	2
M-2X3901	Control Building Area 1 Penetration Closure Wall Elevations Sheet 1	4
M-2X3914	Control Building Area 1 Penetration Closure Wall Elevations Sheet 5	0
M-2Y003	Conduit Fire Stop/Smoke and Gas Seal	0
M-658-00006	Halon 1301 System ESF Switch Gear Room #1 and 2, Control Building EL. 2000’	5
M-663-00017	Penetration Seal Details	21

ENGINEERING INFORMATION RECORDS

Number	Title	Revision
51-5046966-00	Callaway Appendix R Steam Generator Overfill Analysis Basis Document	0
51-5050606-00	Callaway Appendix R Secondary Side Depressurization Analysis Basis Document	0
51-5051110-00	Callaway Appendix R Maximum Reactor Coolant System Overcooling Analysis Basis Document	0
51-5051812-00	Callaway Appendix R Maximum Reactor Coolant System Depressurization Analysis Basis Document	0
51-5054393-00	Callaway Appendix R Maximum Reactor Coolant System Overheating Analysis Basis Document	0

FIRE IMPAIRMENTS

14050 20826 18283

MISCELLANEOUS DOCUMENTS

Number	Title	Revision/Date
A210.0012	Operating Quality Assurance Manual	028c
6ADI06EA	Cable Routing Sheet (ADLV0079A)	NA
6ADI06EB	Cable Routing Sheet (ADLV0079BA and ADLV0079BB)	NA
CA2112	Fire Brigade Equipment Inventory and Condition Checklists	November 15, 2011
Attachment 7-13 to KC-26, Nuclear Safety Capability Assessment	Table for Treatment of MSO in NFPA 805 NSCA and NPO Assessment	July, 2011
Audit Report No.: AP10-003	Nuclear Oversight Audit of Fire Protection	April 14, 2010
AREVA Report	Evaluation of Alternate Shutdown Manual Actions, Transient Analyses, and Operator Timeliness to Address NRC URI 2003007-02	June 9, 2005
E190.0122	Combustible/Electrical Fire Hazards Analysis Program (CEFHAP) – Portions	August, 1993
Lesson Plan T61.0810.8	1105 Sim 4 Control Room Inaccessibility/Evacuation	20110814
Lesson Plan LP-22	Condensate System - AD	20090821
Lesson Plan LP-25	Auxiliary Feedwater System - AL	20120301
01107408	Memorandum of Agreement – South Callaway Fire Protection District	September 6, 2011
APA-ZZ-00143	Applicability Determination – KC-05 Addenda 2	0
FSAR Standard Plant, Section 9.5.1	Fire Protection System	15
FSAR Standard Plant, Section 9.5.1	Fire Protection System	OL-18d
FSAR Site Addendum, Section 9.5.1	Fire Protection System	8
FSAR Site Addendum,	Fire Protection System	OL-18a

Number	Title	Revision/Date
Section 9.5.1		
FSAR Standard Plant, Appendix 9.5A	Design Comparison to Regulatory Positions of Regulatory Guide 1.120, Revision 1, "Fire Protection Guidelines For Nuclear Power Plants"	OL-18e
FSAR Standard Plant, Appendix 9.5B	Fire Hazards Analysis	OL-18f
FSAR Standard Plant, Appendix 9.5D	Design Comparison to 10 CFR 50 Appendix R, Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979	OL-13
	Callaway NFPA 805 Treatment of MSO's	April 18, 2012
NFPA 12A-1973	Standard on Halogenated Fire Extinguishing Agent Systems – Halon 1301	1973
SNUPPS Letter SLNRC 84-0109	Letter from Standardized Nuclear Unit Power Plant System (SNUPPS) to Mr. Harold R. Denton, Director, Office of Nuclear Reactor Regulation; Subject: Fire Protection Review	August 23, 1984
	Letter from Nuclear Regulatory Commission to Wolf Creek Generating Station, Callaway Plant Unit 1; Subject: Minutes of August 22, 1984 Meeting with Kansas Gas and Electric and Union Electric Company	August 31, 1984
00107408	Letter from M. Smart, South Callaway Fire Protection District to A. Heflin, Callaway Plant, Regarding Offsite Assistance for Fire	September 6, 2011
NUREG-0830 Supplement No. 3	Safety Evaluation Report Related to the Operation of Callaway Plant, Unit No. 1	May 1984
NUREG-0830 Supplement No. 4	Safety Evaluation Report Related to the Operation of Callaway Plant, Unit No. 1	October 1984
Scientech Calculation 17671-002b	Callaway NFPA 805 Fire PRA MSO Expert Panel	July 2011
Self-Assessment 201100569-26	Fire Brigade Drill	September 28, 2011
Simple Surveillance Report SP09-01	Follow-up Review from QA Audit of Fire Protection AP08-005	January 26, 2009
10466-M-627B	Technical Specification for Dampers for the Standardized Nuclear Unit Power Plant Systems	11

Number	Title	Revision/Date
Underwriters Laboratory 10B	Standard for Fire Tests of Door Assemblies	August 27, 1979

MODIFICATIONS

Number	Title	Revision
MP 07-0151	Plant Modifications to Support NFPA 805 Transition – Redundant Fuses and Isolation Switches	0
MP 91-1060	Permanently Remove Halon Suppression System for Six Switchgear Rooms in Control Building	B

CALLAWAY ACTION REQUESTS (PROBLEM IDENTIFICATION)

200203631	201200553*	200905329	201106793	201203383*
200307160	201200818	201202931*	201202191	201100491
200307547	201202528	201202904*	201107174	201105861
200608640	200900395	201203317*	201203312*	200906746
200608723	200602028	201203366*	201202858*	200903174
200906497	201109434	199502140	201203314*	201109569
200906593	200901662	200906322	201104413	201004026
201001159	200509837	201203384*	200906330	200901623
201010831	201203377*	200711212	201203187*	201202849*
201202711	201202273	201202792*		

*Issued as a result of inspection activities.

PREVENTIVE MAINTENANCE TASKS

P701141	10507961	10507962	04503035	04503037
04500603	08503989	09511734	08503988	09511735
05511503	08512235	08512236	P627177	P626979
05516244	08512139	P602907	04500602	P627315
05516245	04501969	P604324	08512345	P646543
09505048	10517411	04503509	P627314	08507409
10508131	08512472	07505956	08501571	09510268

12502819 07514390 09505550

PROCEDURES

Number	Title	Revision
APA-ZZ-00300	Control Room Inaccessibility Equipment List	3
APA-ZZ-00395	Significant Operator Response Timing	19
APA-ZZ-00700	Fire Protection Program	18
APA-ZZ-00701	Control of Fire Protection Impairments	18
APA-ZZ-00703	Fire Protection Operability Criteria and Surveillance Requirements	20
APA-ZZ-00741	Control of Combustible Materials	23
APA-ZZ-00742	Control of Ignition Sources	22
APA-ZZ-00743	Fire Team Organization and Duties	23
APA-ZZ-00750	Hazard Barrier Program	24
EDP-ZZ-04044	Fire Protection Reviews	9
EIP-ZZ-00226	Fire Response Procedure for Callaway Plant	15
FPP-ZZ-00001	Auxiliary Building Prefire Strategies	23
FPP-ZZ-00004	Control Building and Communications Corridor Prefire Strategies	17
FPP-ZZ-00006	Turbine Building Prefire Strategies	10
FPP-ZZ-00009	Fire Protection Training Program	25
FPP-ZZ-00013	Operation of Callaway Plant Fire Truck	5
MPM-KC-FP002	Diesel Fire Pump Engine Inspection and Oil Filter Replacement	29
MSE-KC-FW001	Fire Detection Functional and Supervisory Operability Test	31
MSM-KC-FQ001	Functional Test – Halon Systems Protecting Safety Related Areas	27
MSM-KC-FT001	Halon Fire Protection Cylinder Inspection	27
ODP-ZZ-00001	Operations Department – Code of Conduct	76
ODP-ZZ-00001-Addendum 06	Operations Department Communications	9

Number	Title	Revision
ODP-ZZ-00002 Appendix 01	Protected Equipment Program	18
OSP-KC-03003	Fire Main Flow Test	5
OSP-KC-03004	Fire Pump Performance Test	12
OTO-EC-00001	Loss of SFP/Refuel Pool Level	11
OTO-SK-00003	Extensive Damage Mitigation Guidelines	4
OTO-ZZ-00001	Control Room Inaccessibility	23
OTO-ZZ-00001	Control Room Inaccessibility	35
OTO-ZZ-00002	Control Room Operations with Fire	7
OTS-ZZ-00001	Cooldown from Outside the Control Room	9

REQUESTS FOR RESOLUTION

Number	Title	Revision
RFR 19048	Fire Induced Hot Short Design Bases	A
RFR 200905545	Replace Fire Protection Pre-Action Check Valves	
RFR 201000502	Detector Spacing Requirements (NFPA 72D and 72E Code Deviation)	
RFR 201000504	Design Basis of Control Room Cable Trench Halon System (NFPA 12A Code Deviation)	
RFR 21119	Evaluate Basis for HI/LO Pressure Interface	A

SURVEILLANCE TESTS

Number	Title	Date
07513585.500	Fire Main Flow Test (OSP-KC-03003)	April 12, 2011
08502116.500	Functional Test – Halon Systems Protecting Safety Related Areas (Fire Area C-9) (MSM-KC-FQ001 R24)	August 18, 2009
09507367.500	Fire Pump PKC1001A, PKC1002A, and PKC1002B Surveillance (OSP-KC-03004 R9)	June 17, 2010
09508830.500	Fire Detection Functional and Supervisory Operability Test (MSE-KC-FW001 R30)	August 18, 2010
09508830.500	Fire Detection Functional and Supervisory Operability Test – Audible Alarms (MSE-KC-	April 14, 2010

Number	Title	Date
	FW001 R30)	
09509079.500	Functional Test – Halon Systems Protecting Safety Related Areas (Fire Area C-9) (MSM-KC-FQ001 R26)	April 07, 2011
10510165.500	Fire Pump PKC1001A, PKC1002A, and PKC1002B Surveillance (OSP-KC-03004 R10)	May 02, 2011
10515911.500	Fire Detection Functional and Supervisory Operability Test (MSE-KC-FW001 R30)	November 20, 2011
11514598	Control Room Evacuation Equipment Check (APA-ZZ-00300)	December 12, 2011