



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
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ARLINGTON, TEXAS 76011-4125

April 9, 2009

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

SUBJECT: CALLAWAY PLANT - NRC TRIENNIAL FIRE PROTECTION INSPECTION  
REPORT 05000483/2009006

Dear Mr. Heflin:

On February 26, 2009, 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 February 26, 2009, with you 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 inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

There is one finding of very low safety significance (Green) identified in the report. The report also documents a licensee-identified violation which was determined to be of very low safety significance. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV 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.

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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).

Sincerely,

**/RA/**

Neil O'Keefe, Chief  
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Division of Reactor Safety

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

Enclosure: Inspection Report No. 05000483/2009006  
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Publicly Avail	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sensitive	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sens. Type Initials	NFO
RIV:DRS/EB2	RIV:DRS/EB2	RIV:DRS/EB2	RIV:DRS/EB2	C:DRS/EB2	C:DRP/B
JMateychick	SAIferink	GTutak	EUrube	NO'Keefe	VGaddy
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U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket: 05000483

License: NPF-30

Report: 05000483/2009006

Licensee: AmerenUE

Facility: Callaway Plant

Location: Junction Highway CC and Highway O  
Fulton, MO

Dates: February 2 to February 26, 2009

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Accompanying  
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Approved by: Neil O'Keefe, Chief  
Engineering Branch 2  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000483/2009006; 02/02/2009 - 02/26/2009; AmerenUE; 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, which was a non-cited violation (NCV), 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. An NRC-identified violation of License Condition 2.C.(5), "Fire Protection," was identified for failing to effectively correct problems with the issuance and establishment of Fire Protection Impairment Permits. After problems were identified in 2006 and 2007, as a corrective action, the licensee conducted training in 2008 on the program requirements in the Maintenance and Operations Departments. Despite this corrective action, the licensee continued to experience failures to request a fire impairment and failures to implement pre-planned impairments. Some failures involved oversight problems for contract workers, who were not addressed in the training. Two procedural violations occurred in late 2008 that involved the failure to establish a Fire Protection Impairment Permit before performing hot work. The licensee has entered the issue into the corrective action program as Callaway Action Request (CAR) 200901638.

The inspectors determined that failing to correct problems associated with the use of required Fire Protection Impairment Permits is a performance deficiency. The finding is more than minor because it affects the protection against external factors attribute of the initiating events cornerstone, and it directly affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using the NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Phase 1 worksheet, the finding was determined to be of very low safety significance (Green) because the condition represented a low degradation of fire prevention and administrative controls. The cause of the finding is related to the Human Performance cross-cutting component of Work Practices, in that the licensee failed to effectively communicate expectations and personnel failed to follow procedures [H.4.b].

### B. Licensee-Identified Violations

A violation of very low safety significance that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and the corrective action tracking number are listed in Section 4OA7 of this report.

## REPORT DETAILS

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R05 Fire Protection (71111.05TTP)

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure 71111.05TTP, "Fire Protection-NFPA Transition Period (Triennial)," at the Callaway Plant. The licensee committed to adopt a risk informed fire protection program in accordance with National Fire Protection Association 805 (NFPA-805), but have not yet completed the program transition. The inspection team evaluated the implementation of the 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 71111.05TTP 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 to select the following five risk-significant fire areas (inspection samples) for review:

- Fire Area A-1            Auxiliary Building - 1974' Elevation, General Area
- Fire Area A-17        South Electrical Penetration (Room 1409)
- Fire Area A-27        Reactor Trip Switchgear Room
- Fire Area C-10        Train B Engineered Safety Feature Switchgear Room
- Fire Area C-27        Control Room

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 evaluations, 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. Five inspection samples were completed.

#### .01 Shutdown From Outside Main Control Room

##### a. Inspection Scope

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 for fires in areas where the licensee's post-fire safe shutdown strategy relies on manipulating shutdown equipment from outside the control room. The team verified that hot and cold shutdown could be achieved and maintained, with or without offsite power available. The team also verified that the safe shutdown analysis properly

identified the components and systems needed to achieve and maintain safe shutdown conditions.

b. Findings

No findings of significance were identified.

.02 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 walk-downs 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 of significance were identified.

.03 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 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.

b. Findings

No findings of significance were identified.

.04 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 performed a walkdown of accessible portions of the detection and suppression systems in the selected fire areas. The team also performed a walkdown of 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 and diesel fire pump flow and pressure tests to verify that the pumps met their design requirements. The team also reviewed the halon suppression functional tests to verify that the system capability met the design requirements.

The team assessed the fire brigade capabilities by reviewing training, qualification, and drill critique records. 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.

The team observed an unannounced fire drill, conducted on February 25, 2009, and the subsequent drill critique using the guidance contained in Inspection Procedure 71111.05AQ, "Fire Protection Annual/Quarterly." The team observed fire brigade members fight a simulated fire in the Auxiliary Building, located in the radiological controlled area. The team verified that the licensee identified problems, openly discussed them in a self-critical manner at the drill debrief, and identified appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient fire fighting equipment was brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives.

b. Findings

No findings of significance were identified.

.05 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed plant walkdowns 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 of significance were identified.

.06 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

No findings of significance were identified.

### .07 Circuit Analysis

This segment of inspection is suspended for plants in transition to a risk-informed fire protection program in accordance with NFPA 805. Therefore, the team did not evaluate this area.

### .08 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. The team discussed system design, testing, and maintenance with the system engineer.

b. Findings

No findings of significance were identified.

.09 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 of significance were identified.

.10 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 of significance were identified.

.11 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 of significance 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. An example of a problem with the quality of engineering evaluations is discussed in Section 4OA5.

b. Findings

Introduction: The team identified a Green non-cited violation (NCV) of License Condition 2.C(5), "Fire Protection," for failing to effectively correct problems with the issuance and establishment of Fire Protection Impairment Permits (FPIPs).

Description: The team determined that the licensee failed to take effective corrective action with respect to personnel failing to initiate or implement fire protection impairment permits on several occasions. Callaway Action Request (CAR) 200604371 addressed FPIP problems identified by NRC inspectors in June 2006. The team completed a partial review of 2007 and 2008 CAR documents and discovered four additional violations of Procedure APA-ZZ-00701, "Control of Fire Protection Impairments," with regard to a missing or an inactive FPIP. Because of observations made by NRC inspectors in 2007, CAR 200705833 was initiated to request specific training on the requirements for transient combustible permits and fire protection impairment permits. This training was created for the Maintenance and Operations Departments and was completed between April 7 and October 2, 2008. After the training was completed, two procedural violations occurred by failing to establish a FPIPs, demonstrating that the licensee's corrective actions had not been effective. These two occurrences were documented in CAR 200810702 and CAR 200810919.

Analysis: Failing to correct problems associated with the use of required Fire Protection Impairment Permits was a performance deficiency. The finding was determined to be more than minor because it affected the protection against external factors attribute (i.e., fire) of the Initiating Events cornerstone, and it affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions. Using the NRC Inspection Manual Chapter 0609, Appendix F, "Fire

Protection Significance Determination Process,” Phase 1 worksheet, the finding was determined to be of very low safety significance (Green) because the condition represented a low degradation of fire prevention and administrative controls. The inspectors concluded that the repeated failures to implement the requirements of Procedure APA-ZZ-00701 were related to the plant’s work practices. The cause of the finding was related to the Human Performance cross-cutting component of Work Practices in that the licensee failed to effectively communicate expectations and personnel failed to follow procedures [H.4.b].

Enforcement: License Condition 2.C.(5) requires AmerenUE to implement and maintain in effect all provisions of the approved fire protection program as described in the FSAR. Appendix 9.5A, Section C.8, “Corrective Action,” of Branch Technical Position 9.5-1, states that measures to assure conditions adverse to fire protection, such as uncontrolled combustible material and nonconformances, are promptly identified and corrected. The licensee’s response to this requirement states that failures, malfunctions, deficiencies, deviations, defective components, uncontrolled combustible material and nonconformances which affect fire protection are controlled as discussed in the Operating Quality Assurance Manual, Section 16.0 and addressed under the plant’s corrective action request (CAR) program.

Contrary to the above, after specific training was completed, the licensee failed to take effective corrective actions with respect to the issuance and establishment of fire protection impairment permits on several occasions. Specifically, after completing the planned corrective action, there were two additional occurrences where the licensee failed to obtain a permit. Because this violation was of very low safety significance and entered into the licensee’s corrective action program as CAR 200901638, this violation is being treated as a non-cited violation (NCV), per Section VI.A of the NRC Enforcement Policy, (NCV 05000483/2009006-01), Failure to Correct Problems with Fire Protection Impairment Permits.

#### 4OA5 Other Activities

##### Review of Thermal Hydraulic Analysis for Alternative Shutdown Scenarios

In response to Unresolved Item 2003007-02, “Failure to Perform Alternate Shutdown Manual Actions within the Required Times,” the licensee developed a thermal hydraulic analysis for alternative shutdown scenarios. The analysis examined the plant response under various transients and compared the response to the performance goals contained in 10 CFR Part 50, Appendix R, Section III.L. The goal of the analysis was to determine the amount of time available for the operators to take manual actions before exceeding the performance goals of Section III.L.2. The licensee documented the thermal hydraulic analysis in a series of Engineering Information Records (EIRs):

- EIR 51-5046966, “Callaway Appendix R Steam Generator Overfill Analysis Basis Document,” Revision 0
- EIR 51-5050606, “Callaway Appendix R Secondary Side Depressurization Analysis Basis Document,” Revision 0

- EIR 51-5051110, "Callaway Appendix R Maximum Reactor Coolant System Overcooling Analysis Basis Document," Revision 0
- EIR 51-5051812, "Callaway Appendix R Maximum Reactor Coolant System Depressurization Analysis Basis Document," Revision 0
- EIR 51-5054393, "Callaway Appendix R Maximum Reactor Coolant System Overheating Analysis Basis Document," Revision 0

The licensee conservatively analyzed a maximum reactor coolant system depressurization transient (full flow of all auxiliary feedwater pumps concurrent with the spurious opening of both pressurizer power-operated relief valves) in EIR 51-5051812. The analysis concluded that operators would be unable to take the required manual actions before the pressurizer went solid during a maximum reactor coolant system depressurization transient. The analysis concluded that a solid pressurizer would not be problematic since the transient would not result in a loss of reactor coolant system subcooling margin and the transient would be temporary in nature.

The team reviewed the thermal hydraulic analysis contained in EIR 51-5051812 and the data contained in the underlying simulator scenarios. The team identified that the reactor coolant system would lose subcooling approximately one minute into the maximum reactor coolant system depressurization transient. The loss of subcooling would occur before the operator could take manual actions to deenergize and close the pressurizer power-operated relief valves. The analysis did not assess the impact on natural circulation, nor did the analysis provide acceptance criteria for an allowable amount of reactor coolant system voiding.

The team considered the EIR 51-5051812 thermal hydraulic analysis to be an example of inadequate engineering quality. The analysis was reviewed and approved with conclusions which were not supported by the detailed data it contained. This resulted in an inadequate acceptance criteria being applied to manual actions in the fire protection program.

This issue was entered into the corrective action program as CAR 200901662 and will be addressed in the licensee's transition to NFPA 805. The licensee has implemented an hourly fire watch in the control room as a compensatory measure for this issue.

#### 4OA6 Meetings, Including Exit

##### Exit Meeting Summary

The team presented the inspection results to Mr. A. Heflin, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff at an exit meeting on February 26, 2009. 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.

#### 4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, for being dispositioned as a non-cited violation.

- License Condition 2.C.(5), "Fire Protection," requires the licensee to maintain in effect all provisions of the approved fire protection program described in listed regulatory documents. The provisions include the requirement that conditions adverse to fire protection shall be promptly identified, reported, and corrected. Contrary to the above, the licensee identified several examples of performance deficiencies related to the controls of combustible material. The licensee failed to adhere to Procedure APA-ZZ-00741, "Control of Combustible Material," by exceeding transient combustible material limits and not storing combustible material in the appropriate locations. The finding was determined to be of very low safety significance since it involved a low degradation of the fire prevention and administrative controls program. This issue was entered into the licensee's corrective action program as CAR 200901623.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

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S. Maglio, Assistant Manager, Regulatory Affairs  
D. Martin, Systems Engineer, Emergency Lighting  
M. McLachlan, Manager, Engineering Services  
K. Mills, Manager, Plant Engineering  
S. Petzel, Engineer, Regulatory Affairs  
J. Ross, Assistant Operations Manager - Support  
S. Sandbothe, Manager, Regulatory Affairs  
J. Schaefer, Emergency Operating Procedure Coordinator  
B. Taylor, Fire Protection System Engineer  
D. Walker, Licensing Engineer, Regulatory Affairs  
J. Wallendorf, Fire Marshal  
J. Weekley, Assistant Manager, Operations

NRC

Jeremy Groom, Resident Inspector

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

None

Opened and Closed

05000483/2009006-01	NCV	Failure to Correct Problems with Fire Protection Impairment Permits (Section 40A2)
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Closed

None

## LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
CAR	Callaway Action Request
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
EIR	Engineering Information Records
FPIP	Fire Protection Impairment Permits
FSAR	Final Safety Analysis Report
NCV	Non-cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
PAR	Publicly Available Records
SDP	Significance Determination Process
SNUPPS	Standardized Nuclear Unit Power Plant System

## LIST OF DOCUMENTS REVIEWED

### CALCULATIONS

<u>Number</u>	<u>Title</u>	<u>Revision</u>
BN-22	Reactor Water Storage Tank Drain-down Time to the Containment Sump Due to Fire Induced Circuit Failure of Residual Heat Removal Valve EJHV8811A or EJHV8811B	0
KC-316	Fire Protection System Hydraulic Calculations	1
WCAP-15603	Westinghouse Owners Group 2000 Reactor Coolant Pump Seal Leakage Model for Westinghouse Pressurized Water Reactors	1-A
WCAP-16396	Westinghouse Owners Group Reactor Coolant Pump Seal Performance for Appendix R Assessments	0

### DRAWINGS

<u>Number</u>	<u>Title</u>	<u>Revision</u>
A-2801	Architectural Fire Delineation Floor Plan, EL. 1974'	21
A-2802	Architectural Fire Delineation Floor Plan, EL. 2000'	12
A-2803	Architectural Fire Delineation Floor Plan, EL. 2026'	9
E-2L1101	Lighting, Grounding, and Communications – Auxiliary and Reactor Buildings Plan EL 1974'-0"	14
E-2L1202	Lighting, Grounding & Communications Auxiliary Building, Plan EL 1988'-0"	05

E-2L1303	Lighting, Grounding, and Communications – Auxiliary and Reactor Buildings Plan EL 2000'-0"	33
E-2L1404	Lighting, Grounding, and Communications – Auxiliary and Reactor Buildings Plan EL 2026'-0"	34
E-2L1505	Lighting, Grounding & Communications Auxiliary, Reactor & Radioactive Storage Buildings Plan EL 2047'-6" & 2047'-2"	40
E-2L3101	Lighting, Grounding, and Communications – Communications Corridor and Control Building Plan EL 1974'-0"	14
E-2L3302	Lighting, Grounding, and Communications – Containment and Diesel Generators Building Plan EL 2000'-0" and EL 2016'-0"	29
E-2L3503	Lighting, Grounding, and Communications – Containment and Diesel Generators Building Plan EL 2032'-0" and EL 2073'-6"	20
E-2L3604	Lighting, Grounding, and Communications – Containment and Diesel Generators Building Plan EL 2047'-6"	40
E-2L4502	Lighting, Grounding, and Communications – Turbine Building Plan EL 2065'-0"	10
E-23AB20A(Q)	Schematic Diagram, Miscellaneous Circuits	04
E-23AB26	Schematic Diagram – Main Steam Isolation Valves Fast Close Separation Group 1	8
E-23AB27	Schematic Diagram – Main Steam Isolation Valves Fast Close Separation Group 4	10
E-23AB28	Schematic Diagram – Main Steam Isolation Valves Control	10
E-23AB29	Schematic Diagram – Main Steam Isolation Valves Control	7
E-21NB01	Lower Medium Voltage System Class 1E 4.16KV Single Line Meter and Relay Diagram	7
E-21NB02	Lower Medium Voltage System Class 1E 4.16KV Single Line Meter and Relay Diagram	7
E-21NK01	Class 1E 125V DC System Meter & Relay Diagram	8
E-21NK02	Class 1E 125V DC System Meter & Relay Diagram	8
J-110-0586	Wiring Diagram, Terminating Area, Rack - RP053AC	23

M-22AB01	Piping & Instrumentation Diagram Main Steam System	16
M-22AB02	Piping & Instrumentation Diagram Main Steam System	15
M-22AL01	Piping & Instrumentation Diagram Auxiliary Feedwater System	33
M-22BB01	Piping & Instrumentation Diagram Reactor Coolant System	30
M-22BB02	Piping & Instrumentation Diagram Reactor Coolant System	29
M-22BB03A	Piping & Instrumentation Diagram Reactor Coolant System	9
M-22BG01	Piping & Instrumentation Diagram Chemical and Volume Control System	28
M-22BG02	Piping & Instrumentation Diagram Chemical and Volume Control System	26
M-22BG03	Piping & Instrumentation Diagram Chemical and Volume Control System	52
M-22BG04	Piping & Instrumentation Diagram Chemical and Volume Control System	20
M-22BG05	Piping & Instrumentation Diagram Chemical and Volume Control System	24
M-22BN01	Piping & Instrumentation Diagram Borated Refueling Water Storage System	25
M-22EF01	Piping & Instrumentation Diagram Essential Service Water System	69
M-22EF02	Piping & Instrumentation Diagram Essential Service Water System	69
M-22EG01	Piping & Instrumentation Diagram Closed Cooling Water System	9
M-22EG02	Piping & Instrumentation Diagram Closed Cooling Water System	18
M-22EG03	Piping & Instrumentation Diagram Closed Cooling Water System	20
M-22KC01	Piping & Instrumentation Diagram Fire Protection Turbine Building	21
M-22KC02	Piping & Instrumentation Diagram Fire Protection System	20

M-22KC03

Piping & Instrumentation Diagram Fire Protection  
System

23

M-22KC04	Piping & Instrumentation Diagram Fire Protection Halon System	7
M-22KC05	Piping & Instrumentation Diagram Fire Protection System	11
M-22KC06	Piping & Instrumentation Diagram Fire Protection Halon System	3
M-22KC07	Piping & Instrumentation Diagram Fire Protection Halon System	7
M-22KC08	Piping & Instrumentation Diagram Fire Protection System Pre-Action Sprinkler System	9
M-663-00017	Penetration Seal Details	20
M-650A-00006	Wet Pipe Sprinkler System North & South Cable Chases Auxiliary Building	7
M-658-00012	Halon Fire System Electrical Penetration Room #1 (South)	4
M-658-00013	Load Center and Motor Generator Sets Room Auxiliary Building	6
M-658-00006	Halon 1301 System Engineered Safety Feature Switch Gear Room #1 & 2	5
M-650A-00060	Extended Sprinkler System Coverage Auxiliary Building Corridor	3
M-650A-00012	Preaction Sprinkler System Auxiliary Building	9
30432A-570	Electric Motor Fire Pump Controller Model M300	C
8600-X-88199	Schematic Diagram Electric Fire Pump & 480V Alarms Fire Protection System	11
8600-X-88200	Schematic Diagram Diesel Fire Pump DPKC100A Fire Protection System	13
8600-X-88932	Schematic Diagram Miscellaneous Site Systems On-Site Communications Signal & Control Systems	8

ENGINEERING INFORMATION RECORDS

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

FIRE IMPAIRMENTS

14050      15887      16199      16277      16314      16537      16639

JOBS

09000946	06522961	06522962	07504942	07505136
06524075	06523263	06523265	06527625	07505804
06530567	07505805	06526106	07501663	07505811
07504954	P627316	P627315	P655151	P634697
P627314	P627177	P626979	06531468	06524324
P646543	05516244	05516245		

MODIFICATIONS

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CMP 97-1038	Installation of a New Auxiliary Building Tool Issue Area	A
MP 00-1009B	Main Steam Isolation Valves Actuator Replacement	0
MP 02-1019	Install Darmatt Fire Wrap on Several Electrical Components in Aux Building	A
MP 06-0008	Control Room Fire Transient Analysis	0

PROBLEM IDENTIFICATION REPORTS (CARs)

200901662*	200810702	200710004	200702590	200608723
200901649*	200808547	200708881	200702528	200608640
200900998	200804350	200706900	200701781	200607280
200900973*	200803753	200706022	200701603	200307199
200900395	200803686	200705833	200701401	200307189
200812676	200801996	200705730	200700650	200307160
200812198*	200801975	200704942	200610379	200002890
200811036	200800301	200704932	200609759	200206599
200810919	200711792	200703451	200609746	200307092

\*Issued as a result of inspection activities.

PREVENTIVE MAINTENANCE TASKS

0819768	0819769	0819770	0819771	0819772
0819773	0819774	0819776	0821539	

PROCEDURES

<u>Number</u>	<u>Title</u>	<u>Revision</u>
APA-ZZ-00395	Significant Operator Response Timing	10
APA-ZZ-00700	Fire Protection Program	13
APA-ZZ-00701	Control of Fire Protection Impairments	13
APA-ZZ-00703	Fire Protection Operability Criteria and Surveillance Requirements	19
APA-ZZ-00741	Control of Combustible Materials	21
APA-ZZ-00742	Control of Ignition Sources	19
APA-ZZ-00743	Fire Team Organization and Duties	23
APA-ZZ-00750	Hazard Barrier Program	16
EDP-ZZ-04044	Fire Protection Reviews	9
EIP-ZZ-00226	Fire Response Procedure for Callaway Plant	12
FPP-ZZ-00001	Auxiliary Building Prefire Strategies	22

FPP-ZZ-00004	Control Building and Communications Corridor Prefire Strategies	13
FPP-ZZ-00009	Fire Protection Training Program	17
FPP-ZZ-00012	Fire Pre-Plan Off Site Support Organizations	3
MPM-KC-FW001	Three Year Water Spray Flow Test	008
MSE-KC-FW001	Fire Detection Functional and Supervisory Operability Test	028
MSM-KC-FQ001	Power Block Halon Functional Test	022
MSM-KC-FT001	Halon Fire Protection Cylinder Inspection	021
ODP-ZZ-00001-Addendum 06	Operations Department Communications	6
OSP-KC-00020	Pre-action Sprinkler Supervisory Air Alarm Test	009
OSP-KC-03003	Fire Main Flow Test	000
OSP-KC-03004	Fire Pump Performance Test	001
OTO-ZZ-00001	Control Room Inaccessibility	31
OTO-ZZ-0001	Control Room Inaccessibility	19
OTS-QD-00001	Emergency Lighting Tests	14
OTS-ZZ-00001	Cooldown from Outside the Control Room	04

REQUESTS FOR RESOLUTION

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RFR 19214	Approve Use of Chairman GPC6100 Battery in Emergency Battery Lights	A
RFR 20817	Evaluate Fire Detector Spacing Requirements	A
RFR 22709	Emergency Communication Capability on Auxiliary Building 2026'	A
RFR 22709	Emergency Communication Capability on Auxiliary Building 2026'	B
RFR 200804192	Install Additional Emergency Lights for Post Fire Safe Shutdown	

## MISCELLANEOUS DOCUMENTS

<u>Number</u>	<u>Title</u>	<u>Revision</u>
A210.0012	Operating Quality Assurance Manual	026d
Audit Report NO.: AP08-005	Quality Assurance Audit of Fire Protection	7/19/2008
AREVA Report	Evaluation of Alternate Shutdown Manual Actions, Transient Analyses, and Operator Timeliness to Address NRC URI 2003007-02	06/09/2005
BID – DAMP	Background Information Document - Dampers	3
CA-080710 PER	Nuclear Electric Insurance Limited Property Loss Control Comprehensive Report	July 2008
FSAR Standard Plant, Section 9.5.1	Fire Protection System	OL-16d
FSAR Site Addendum, Section 9.5.1	Fire Protection System	OL-15
SNUPPS Letter SLNRC 84-0109	Fire Protection Review	08/23/1984
Simple Surveillance Report SP08-037	Safe Shutdown Lighting	10/15/2008