UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E LAMAR BLVD
ARLINGTON, TX 76011-4511

August 4, 2014

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

SUBJECT: CALLAWAY PLANT – NRC INTEGRATED INSPECTION REPORT 05000483/2014003

Dear Mr. Diya:

On July 1, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Callaway Plant. On July 1, 2014, the NRC inspectors discussed the results of this inspection with you and members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented two findings of very low safety significance (Green) in this report. One of these findings involved a violation of NRC requirements. Further, inspectors documented a licensee-identified violation, which was determined to be of very low safety significance. The NRC is treating these violations as non-cited violation (NCV) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Callaway Plant.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC resident inspector at the Callaway Plant.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Neil O'Keefe, Branch Chief
Project Branch B
Division of Reactor Projects

Docket Nos.: 50-483
License Nos: NPF-30

Enclosure:
Inspection Report 05000483/2014003
w/Attachments
1. Supplemental Information
2. Callaway SSPS Replacement Questions

cc w/ encl:
Electronic Distribution for Callaway Plant

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Neil O'Keefe, Branch Chief
Project Branch B
Division of Reactor Projects

Docket Nos.: 50-483
License Nos: NPF-30

Inspection Report 05000483/2014003
w/Attachments
1. Supplemental Information
2. Callaway SSPS Replacement Questions

cc w/ encl:
Electronic Distribution for Callaway Plant

Distribution: See next page

DOCUMENT NAME: R:_REACTORS_CW\CWY2014003-RP/TCH
ADAMS ACCESSION NUMBER: ML14216A691

☒ SUNSI Review By: N. O'Keefe		ADAMS ☒ Yes ☐ No	☒ Publicly Available ☐ Non-Publicly Available		☒ Non-Sensitive ☐ Sensitive		Keyword: NRC-002
OFFICE	SRI/DRP/B	RI/DRP/B	SPE/DRP/B	C:DRS/EB1	C:DRS/EB2	C:DRS/OB	C:DRS/PSB1
NAME	THartman/dch	ZHollcraft	DProulx	TFarnholtz	JDixon	VGaddy	MHaire
SIGNATURE	E: CFO for	E: CFO for	/RA/	/RA/	/RA/	/RA/	/RA/
DATE	7/28/14	7/28/14	7/25/14	8/4/14	7/28/14	7/28/14	7/31/14
OFFICE	C:DRS/PSB2	C:DRS/TSB	C:DRP/B				
NAME	Gepford	GMiller	NOKeefe				
SIGNATURE	/RA/	/RA/	/RA/				
DATE	7/28/14	7/31/14	8/4/14				

OFFICIAL RECORD COPY

Letter/Inspection Report to Fadi Diya from Neil O'Keefe, dated August 4, 2014

SUBJECT: CALLAWAY PLANT – NRC INTEGRATED INSPECTION REPORT 05000483/2014003

DISTRIBUTION:
Regional Administrator (Marc.Dapas@nrc.gov)
Deputy Regional Administrator (Kriss.Kennedy@nrc.gov)
Acting DRP Director (Troy.Pruett@nrc.gov)
Acting DRP Deputy Director (Michael.Hay@nrc.gov)
DRS Director (Anton.Vegel@nrc.gov)
DRS Deputy Director (Jeff.Clark@nrc.gov)
Senior Resident Inspector (Thomas.Hartman@nrc.gov)
Resident Inspector (Zachary.Hollcraft@nrc.gov)
Branch Chief, DRP/B (Neil.OKeefe@nrc.gov)
Senior Project Engineer, DRP/B (David.Proulx@nrc.gov)
Project Engineer, DRP/B (Fabian.Thomas@nrc.gov)
CW Administrative Assistant (Dawn.Yancey@nrc.gov)
Public Affairs Officer (Victor.Dricks@nrc.gov)
Public Affairs Officer (Lara.Uselding@nrc.gov)
Project Manager (Fred.Lyon@nrc.gov)
Branch Chief, DRS/TSB (Geoffrey.Miller@nrc.gov)
RITS Coordinator (Marisa.Herrera@nrc.gov)
ACES (R4Enforcement.Resource@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Technical Support Assistant (Loretta.Williams@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
RIV/ETA: OEDO (Anthony.Bowers@nrc.gov)
ROPreports

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000483
License:	NPF-30
Report:	05000483/2014003
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Steedman, MO
Dates:	March 22 through July 1, 2014
Inspectors:	T. Hartman, Senior Resident Inspector Z. Hollcraft, Resident Inspector J. Braisted, Reactor Inspector P. Elkmann, Senior Emergency Preparedness Inspector G. George, Senior Reactor Inspector P. Jayroe, Reactor Inspector D. Proulx, Senior Project Engineer R. Stroble, Resident Inspector
Approved By:	N. O'Keefe Chief, Project Branch B Division of Reactor Projects

SUMMARY

IR 05000483/2014003; 03/22/2014 – 07/01/2014; Callaway Plant, Integrated Resident and Regional Report; Operability Determinations and Functionality Assessments, and Other Activities.

The inspection activities described in this report were performed between March 22 and June 20, 2014, by the resident inspectors at the Callaway Plant and other inspectors from Region IV. Two findings of very low safety significance (Green) are documented in this report. One finding involved a violation of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform an adequate extent of condition assessment. While performing an evaluation of pitting corrosion identified on buried refueling water storage piping, the licensee failed to provide an adequate technical justification for not expanding the scope of their review beyond the specific piping when pitting corrosion was identified in the original sample selection. Licensee procedural guidance for a Significance Level 3 adverse condition requires the reviewer to identify other potentially susceptible systems or components and fully explain the boundary for the extent of condition, but this was not done. This finding does not represent an immediate safety concern. The licensee entered the finding into their corrective action program as Callaway Action Request 201402168. This finding affected safety-related piping in which pitting was observed and repaired prior to being returned to service.

  The licensee's failure to perform an adequate extent of condition review of the pitting of the buried 24-inch refueling water storage tank piping in the essential core cooling system supply line is a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because if left uncorrected, it has the potential to lead to a more significant safety concern if other welds on this same pipe render it susceptible to pitting corrosion in the weld heat affected zone. The finding affects the Mitigating System Cornerstone because the performance deficiency is related to the essential core cooling system's ability to conduct short-term decay heat removal. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, did not result in the loss of operability or functionality of a single train for greater than the technical specification allowed outage time, and did not represent an actual loss of safety function for greater than 24 hours. This finding has a cross-cutting aspect in the conservative bias component of the human performance cross-cutting area because the licensee did not use conservative decision-making practices that emphasize prudent choices over those that are simply allowable [H.14]. (Section 4OA5)

Cornerstone: Barrier Integrity

- Green. The inspectors identified a finding for the licensee's failure to properly install a flow transmitter for the containment spray system. Specifically, since construction, Rosemount Transmitter ENFT0005, which provides a signal for containment spray train A pump flow rate, had a plastic shipping plug installed in the spare conduit port instead of the vendor-required stainless steel plug. The licensee did not include this transmitter as part of an operating experience extent of condition walkdown conducted in 2010 because the transmitter provides indication only and does not have an active safety function. However, the inspector determined that this transmitter provides operator post-accident monitoring capability of containment spray pump performance. The licensee entered this issue into the corrective action program as Callaway Action Request 201403300. The licensee reviewed this deficiency and determined that although Transmitter ENFT0005 was degraded, the containment spray system remained operable. The licensee promptly replaced the plastic shipping plug with the required stainless steel plug.

  Failure to properly install a Rosemount transmitter needed for post-accident monitoring to its qualified configuration was a performance deficiency. This performance deficiency was more than minor, and therefore a finding, because it adversely affected the configuration control attribute and the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers (i.e., containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the improperly configured containment spray flow transmitter could have resulted in erratic spray flow indication, which could impede operators' ability to monitor this parameter and act upon the indication. The finding is of very low safety significance (Green) because containment spray is not a significant contributor to large early release frequency. This finding does not have a cross-cutting aspect because the transmitter was installed in this manner during original construction and, thus, was not indicative of current licensee performance. (Section 1R15)

Licensee-Identified Violations

A violation of very low safety significance was identified by the licensee and 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 associated corrective action tracking numbers are listed in Section 4OA7 of this report.

PLANT STATUS

Callaway operated at 100 percent power for the duration of the inspection period with the exception of planned power reductions for routine surveillances and post-maintenance testing.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Summer Readiness for Offsite and Alternate AC Power Systems

a. Inspection Scope

On May 16, 2014, the inspectors completed an inspection of the station's offsite and alternate ac power systems. The inspectors inspected the material condition of these systems, including transformers and other switchyard equipment, to verify that plant features and procedures were appropriate for operation and continued availability of offsite and alternate ac power systems. The inspectors reviewed open condition reports for these systems. The inspectors walked down the switchyard to observe the material condition of equipment providing offsite power sources. The inspectors assessed corrective actions for identified degraded conditions and verified that the licensee had considered the degraded conditions in its risk evaluations and had established appropriate compensatory measures.

The inspectors verified that the licensee's procedures included appropriate measures to monitor and maintain availability and reliability of the offsite and alternate ac power systems.

These activities constituted one sample of summer readiness of offsite and alternate ac power systems, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- April 22, 2014, residual heat removal system train B
- April 30, 2014, auxiliary feedwater system train B
- June 17, 2014, emergency exhaust system train B

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the trains were correctly aligned for the existing plant configuration.

These activities constituted three partial system walk-down samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On April 21, 2014, the inspectors performed a complete system walkdown inspection of the control building heating, ventilation, and air conditioning system. The inspectors reviewed the licensee's procedures and system design information to determine the correct system lineup for the existing plant configuration. The inspectors also reviewed outstanding work orders, open condition reports, and other open items tracked by the licensee's operations and engineering departments. The inspectors then visually verified that the system was correctly aligned for the existing plant configuration.

These activities constituted one complete system walk-down sample, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on five plant areas important to safety:

- April 16, 2014, transformers west of the turbine building, fire area T-14
- April 23, 2014, residual heat removal train A pump room, fire area A-2A
- May 19, 2014, access control and electrical equipment air conditioning unit train A room, fire area C-14
- June 2, 2014, upper and lower cable spreading rooms, fire areas C-21 and C-22
- June 17, 2014, control building and communications corridor, fire area C-27

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constitute five quarterly fire protection inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On May 13, 2014, the inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose the Class 1E ac electrical switchgear train A room plant area which contains risk-significant structures, systems, and components that are susceptible to flooding.

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected area to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

In addition, on June 5, 2014, the inspectors completed an inspection of underground bunkers susceptible to flooding. The inspectors selected safety-related electrical manhole MH01B that contained risk-significant cables whose failure could disable risk-significant equipment. The inspectors observed the material condition of the cables and splices contained in the manhole and looked for evidence of cable degradation due to water intrusion. The inspectors verified that the cables and manhole met design requirements.

These activities constitute completion of one flood protection measures sample and one bunker/manhole sample, as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

On April 9, 2014, the inspectors completed an inspection of the readiness and availability of risk-significant heat exchangers. The inspectors reviewed the data from eddy current testing for emergency diesel lubricating oil heat exchanger train B and observed the licensee's inspection and the material condition of the heat exchanger internals.

Additionally, the inspectors walked down this heat exchanger to observe its performance and material condition.

These activities constitute completion of one heat sink performance annual review sample, as defined in Inspection Procedure 71111.07.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On May 6, 2014, the inspectors observed a portion of an annual requalification test for licensed operators. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the requalification activities.

These activities constitute completion of one quarterly licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

On April 27, 2014, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened risk due to the turbine-driven auxiliary feedwater pump being unavailable for testing.

In addition, the inspectors assessed the operators' adherence to plant procedures, including ODP-ZZ-00001, "Operations Department – Code of Conduct," and other operations department policies.

These activities constitute completion of one quarterly licensed operator performance sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed three instances of degraded performance or condition of safety-related structures, systems, and components:

- April 2, 2014, centrifugal charging pump train A room cooler faulty stop pushbutton
- May 14, 2014, boron injection header train B outlet to cold legs isolation valve torque switch set incorrectly
- May 27, 2014, ultimate heat sink cooling tower train A electrical room inlet damper operator hydramotor failure

The inspectors reviewed the extent of condition of possible common cause structure, system, and component failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the structures, systems, and components. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule), and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of three maintenance effectiveness samples, as defined in Inspection Procedure 71111.12.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed three risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- March 25, 2014, Yellow risk for emergency diesel generator train A, essential service water train A, and ultimate heat sink train A planned maintenance, Job 13512067
- April 9, 2014, elevated Green risk for emergency diesel generator train B, essential service water train B, and ultimate heat sink train B planned maintenance, Job 11504085
- April 30, 2014, Yellow risk for turbine-driven auxiliary feedwater pump planned maintenance, Job 14501194

The inspectors verified that these risk assessments were performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessments and verified that the licensee implemented appropriate risk management actions.

Additionally, on May 20, 2014, the inspectors observed portions of one emergent work activity, replacement of a current to pneumatic converter on the turbine-driven auxiliary feedwater flow control valve to steam generator B, Job 14002312, which had the potential to affect the functional capability of mitigating systems.

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to minimize the impact of the work activities on unaffected structures, systems, and components.

These activities constitute completion of four maintenance risk assessments and emergent work control inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed four operability determinations and functionality assessments that the licensee performed for degraded or nonconforming structures, systems, or components:

- April 3, 2014, functionality assessments of spent fuel pool pump train B room cooler, Callaway Action Requests 201401683 and 201401587
- May 13, 2014, operability determination of containment spray train A pump discharge flow transmitter, Callaway Action Request 201403300
- May 28, 2014, operability determination of engineered safety features switchgear train A from improperly stored floor mats, Callaway Action Request 201401795
- June 17, 2014, functionality assessment of Class 1E switchgear room chiller train A, Callaway Action Request 201403902

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded structures, systems, and components to be operable or functional, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability or functionality. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability or functionality of the degraded structure, system, or component.

These activities constitute completion of four operability and functionality review samples, as defined in Inspection Procedure 71111.15.

b. Findings

Shipping Plug Installed in Rosemount Transmitter

Introduction. The inspectors identified a Green finding for the failure to properly install a flow transmitter for the containment spray system. Specifically, as of May 13, 2014, Transmitter ENFT0005, which provides a signal for containment spray pump train A flow rate, had a plastic shipping plug installed in the spare conduit port, instead of the vendor-required stainless steel plug.

Description. Flow Transmitter ENFT0005 provides a signal for control room indication of containment spray flow rate. It is a Rosemount 1153 Series B model transmitter, which is used in several safety-related and nonsafety-related level or flow applications. It is located in the emergency core cooling system train A room (which contains the containment spray, centrifugal charging, safety injection pumps, and supporting equipment).

On May 13, 2014, during a tour of the emergency core cooling system train A room, the inspectors noted that a plastic shipping plug was installed in the spare conduit port for Transmitter ENFT0005, on the bottom where it was not readily visible. The vendor manual for the transmitter directed the user to discard the plastic plug upon installation and install a stainless steel plug in the spare conduit hole using thread sealant to prevent moisture intrusion. The inspectors informed the licensee, who initiated Callaway Action Request 201403300 to enter this issue into the corrective action program. The licensee reviewed this deficiency and determined that although Transmitter ENFT0005 was degraded, the containment spray train remained operable. The licensee replaced the plastic shipping plug with the vendor-recommended stainless steel plug in accordance with Job 14002189.

The licensee investigation revealed that Transmitter ENFT0005 had been installed with the plastic shipping plug during original construction. Using industry-operating experience, the licensee had several previous opportunities to identify this issue. The licensee had previously issued Callaway Action Request 201011748 to inspect similar transmitter configurations at Callaway Plant. The scope of these inspections was limited to transmitters that had an active safety function (e.g., actuation or trip signals). Because Transmitter ENFT0005 provides indication only, it was not included in the scope of the 2010 inspection. The inspectors noted that the containment spray flow indication, although considered a nonsafety-related parameter, is listed in the Updated Final Safety Analysis Report, Table 7-3A, Item D.6.1, as a passive post-accident monitoring variable.

Although Transmitter ENFT0005 was not a 10 CFR Part 50, Appendix B, quality-related component, the licensee did not meet the standard of having a fully qualified instrument for post-accident monitoring, in that the transmitter did not conform to the vendor-recommended configuration to prevent post-accident moisture intrusion. Reference Manual 00809-0100-04302, “Rosemount 1153 Series B Alphaline Pressure Transmitter,” Revision BA, January 2008, Section 2, “Installation,” directed the user to close off the unused conduit hub with a stainless steel ½ - 14 NPT plug and seal all threads with pipe

thread sealant. Leaving the plastic shipping plug in place from initial construction until May 13, 2014, did not meet this standard and was considered a finding.

Analysis. Failure to properly install a Rosemount transmitter needed for post-accident monitoring to its qualified configuration was a performance deficiency. Specifically, the licensee failed to replace a plastic shipping plug with a stainless steel plug to provide protection from the environment. This performance deficiency was more than minor; and therefore a finding, because it adversely affected the configuration control attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (i.e., containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the improperly configured containment spray flow transmitter could result in erratic spray flow indication, which could impede operators' ability to monitor this parameter and to act upon the indication.

Using NRC Inspection Manual 0609, Appendix H, "Containment Integrity Significance Determination Process," issued May 6, 2004, the finding was determined to be of very low safety significance because the containment spray system is not a significant contributor to a large early release frequency. This finding does not have a cross-cutting aspect because it was not indicative of current licensee performance since the transmitter was installed during original construction.

Enforcement. This finding does not involve enforcement action because no violation of a regulatory requirement was identified. Because this finding does not involve a violation and is of very low safety significance, it is identified as FIN 05000483/2014003-01, "Plastic Shipping Plug in Rosemount Transmitter."

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed five post-maintenance testing activities that affected risk-significant structures, systems, or components:

- March 26, 2014, emergency diesel generator train A fast start, Job 13512067
- April 9, 2014, essential service water pump train B, Job 12511473
- April 9, 2014, ultimate heat sink cooling tower fans B and D, Jobs 12511470 and 12511471
- April 23, 2014, residual heat removal pump train A, Job 12512029
- June 18, 2014, emergency exhaust filter train A, Job 14001821

The inspectors reviewed licensing- and design-basis documents for the structures, systems, and components and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected structures, systems, and components.

These activities constitute completion of five post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed six risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the structures, systems, and components were capable of performing their safety functions:

In-service tests:

- April 27, 2014, turbine-driven auxiliary feedwater pump valve inservice tests

Containment isolation valve surveillance tests:

- May 19, 2014, containment isolation damper test

Reactor coolant system leak detection tests:

- May 30, 2014, reactor coolant system inventory balance

Other surveillance tests:

- April 23, 2014, emergency exhaust system train A operability test
- May 27, 2014, motor-driven auxiliary feedwater pump train B test
- June 9, 2014, safety injection pump train A test

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the test satisfied appropriate acceptance criteria. The inspectors verified that the licensee restored the operability of the affected structures, systems, and components following testing.

These activities constitute completion of six surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluation (71114.02)

a. Inspection Scope

The inspectors verified the adequacy of the licensee's methods for testing the primary and backup alert and notification system. The inspectors also reviewed the licensee's program for identifying emergency planning zone locations requiring tone alert radios and for distributing the radios, and reviewed audits of distribution records. The inspectors interviewed licensee personnel responsible for the maintenance of the primary and backup alert and notification system and reviewed a sample of corrective action system reports written for alert and notification system problems. The inspectors compared the licensee's alert and notification system testing program with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; FEMA Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants;" and the licensee's current FEMA-approved alert and notification system design report, "Callaway Plant, Alert and Notification System Design Report," dated January 2013. The inspectors also observed the licensee and offsite authorities jointly conduct a scheduled weekly siren system test on April 22, 2014.

These activities constituted completion of one alert and notification system evaluation sample as defined in Inspection Procedure 71114.02.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)

a. Inspection Scope

The inspectors verified the licensee's emergency response organization on-shift and augmentation staffing levels were in accordance with the licensee's emergency plan commitments. The inspectors reviewed documentation and discussed with licensee staff the operability of primary and backup systems for augmenting the on-shift emergency response staff to verify the adequacy of the licensee's methods for staffing emergency response facilities, including the licensee's ability to staff pre-planned alternate facilities. The inspectors also reviewed records of emergency response organization augmentation tests and events to determine whether the licensee had maintained a capability to staff emergency response facilities within emergency plan timeliness commitments.

These activities constitute completion of one emergency response organization staffing and augmentation testing sample as defined in Inspection Procedure 71114.03.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors performed an on-site review of the Callaway Plant Radiological Emergency Response Plan, Revision 44, implemented April 9, 2014. This revision:

- Assigned some of the duties of the Emergency Duty Officer to the Emergency Coordinator, Technical Support Center (TSC)
- Changed the response time goal for activating the on-shift emergency response organization staff from 15 minutes to immediate

This revision was compared to the previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q)(3) and 50.54(q)(4). This review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection.

These activities constitute completion of one emergency action level and emergency plan changes sample as defined in Inspection Procedure 71114.04.

b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness (71114.05)

a. Inspection Scope

The inspectors reviewed the following for the period October 2012 through April 2014:

- After-action reports for emergency classifications and events
- After-action evaluation reports for licensee drills and exercises
- Independent audits and surveillances of the licensee's emergency preparedness program
- Self-assessments of the emergency preparedness program conducted by the licensee
- Licensee evaluations of changes made to the emergency plan and emergency plan implementing procedures
- Drill and exercise performance issues entered into the licensee's corrective action program
- Emergency preparedness program issues entered into the licensee's corrective action program

- Emergency response organization and emergency planner training records
- Maintenance records for equipment supporting the emergency preparedness program
- Evaluations of the effect of changes to the emergency planning zone population

The inspectors reviewed summaries of 334 corrective action program reports associated with emergency preparedness and selected 30 to review against program requirements to determine the licensee's ability to identify, evaluate, and correct problems in accordance with Planning Standard 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E, IV.F. The inspectors verified that the licensee accurately and appropriately identified and corrected emergency preparedness weaknesses during critiques and assessments.

The inspectors reviewed summaries of 70 licensee evaluations of the impact of changes to the emergency plan and implementing procedures, and selected 12 to review against program requirements to determine the licensee's ability to identify reductions in the effectiveness of the emergency plan in accordance with the requirements of 10 CFR 50.54(q)(3) and 50.54(q)(4). The inspectors verified that evaluations of proposed changes to the licensee emergency plan appropriately identified the impact of the changes prior to being implemented.

The inspectors toured the emergency response facility, the alternate TSC, and the alternate operations support center to determine whether the licensee had adequately implemented alternate emergency response facilities in accordance with the requirements of 10 CFR Part 50, Appendix E, IV.E(8)(d).

These activities constitute completion of one sample of the maintenance of the licensee's emergency preparedness program as defined in Inspection Procedure 71114.05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors observed an emergency preparedness drill on May 8, 2014, to verify the adequacy and capability of the licensee's assessment of drill performance. The inspectors reviewed the drill scenario, observed the drill from the TSC, and attended the post-drill critique. The inspectors verified that the licensee's emergency classifications, off-site notifications, and protective action recommendations were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the licensee in the post-drill critique and entered into the corrective action program for resolution.

These activities constitute completion of one emergency preparedness drill observation sample, as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

4OA1 Performance Indicator Verification (71151)

.1 Safety System Functional Failures (MS05)

a. Inspection Scope

For the period of second quarter 2013 through first quarter 2014, the inspectors reviewed licensee event reports, Maintenance Rule evaluations, and other records that could indicate whether safety system functional failures had occurred. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, and NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73," Revision 3, to determine the accuracy of the data reported.

These activities constituted verification of the safety system functional failures performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: Heat Removal Systems (MS08)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of second quarter 2013 through first quarter 2014 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for heat removal systems, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Reactor Coolant System Identified Leakage (BI02)

a. Inspection Scope

The inspectors reviewed the licensee's records of reactor coolant system (RCS) identified leakage for the period of second quarter 2013 through first quarter 2014 to verify the accuracy and completeness of the reported data. The inspectors observed the performance of Procedure OSP-BB-00009, "RCS Inventory Balance," on May 30, 2014. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system leakage performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors reviewed the licensee's emergency plan implementations, evaluated exercises, and selected drill and training evolutions that occurred between the third quarter 2013 and the first quarter 2014 to verify the accuracy of the licensee's data for classification, notification, and protective action recommendation opportunities. The inspectors reviewed a sample of the licensee's completed classifications, notifications, and protective action recommendations to verify their timeliness and accuracy. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the drill/exercise performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.5 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors reviewed the licensee's records for participation in drill and training evolutions between the third quarter 2013 and the first quarter 2014 to verify the accuracy of the licensee's data for drill participation opportunities. The inspectors verified that all members of the licensee's emergency response organization in the identified key positions had been counted in the reported performance indicator data. The inspectors reviewed the licensee's basis for reporting the percentage of emergency response organization members who participated in a drill. The inspectors reviewed drill attendance records and verified a sample of those reported as participating. The

inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the emergency response organization drill participation performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.6 Alert and Notification System Reliability (EP03)

a. Inspection Scope

The inspectors reviewed licensee and offsite agency records of alert and notification system tests conducted between the third quarter 2013 and the first quarter 2014 to verify the accuracy of the licensee's data for siren system testing opportunities. The inspectors reviewed procedural guidance on assessing alert and notification system opportunities and the results of periodic alert and notification system operability tests. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the alert and notification system reliability performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program and periodically attended the licensee's condition report screening meetings. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Semiannual Trend Review

a. Inspection Scope

To verify that the licensee was taking corrective actions to address identified adverse trends that might indicate the existence of a more significant safety issue, the inspectors reviewed corrective action program documentation associated with the following licensee-identified trends:

- Increased failure rate for hydramotors

Also, the inspectors identified the following trends that might indicate the existence of a more significant safety issue and reviewed the licensee's response to them:

- Inconsistent use of "peer-checking" human performance tools in the control room
- Increasing number of transient combustible permit issues

These activities constitute completion of one semiannual trend review sample, as defined in Inspection Procedure 71152.

b. Observations and Assessments

The inspectors' review of the trends identified above produced the following observations and assessments:

The inspectors reviewed the licensee's corrective action program, performance indicators, system health reports, and other documentation to identify trends that might indicate the existence of a more significant safety issue. The inspectors verified that the licensee was taking corrective actions to address identified adverse trends.

While completing this trend review, the inspectors did note the following negative trends: inconsistent use of "peer-checking" human performance tools in the control room, technical specification application knowledge deficiencies, hydramotor failures, and an increasing number of transient combustible permit issues. The licensee was aware of these issues and has entered them into their corrective action program.

The inspectors did not review any cross-cutting theme because no cross-cutting theme exists at the site.

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected one issue for an in-depth follow-up:

- On March 30, 2014, Callaway Action Request 201401530 identified that the nuclear oversight group is not fully effective in driving station performance. This issue was identified by the offsite nuclear safety review board.

The inspectors selected this issue because a lack of response to issues identified by the internal nuclear oversight group can be an indicator of station performance. The inspectors assessed the licensee's problem statement, cause analyses, and extent of condition review. The inspectors interviewed several members of the nuclear oversight group and station line management. The inspectors determined that there are departments at the station that are less receptive to comments from the nuclear oversight group than others. The inspectors also determined that the nuclear oversight group was not always clear when conveying their concerns. The inspectors concluded that the completed and planned corrective actions were adequate to address the issue.

These activities constitute completion of one annual follow-up sample as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 (Closed) Temporary Instruction 2515/182: Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks

a. Inspection Scope

Leakage from buried and underground pipes has resulted in groundwater contamination incidents with associated heightened NRC and public interest. The industry issued a guidance document, Nuclear Energy Institute 09-14, "Guideline for the Management of Buried Piping Integrity," (ADAMS Accession No. ML1030901420) to describe the goals and required actions (commitments made by the licensee) resulting from this underground piping and tank initiative. On December 31, 2010, Nuclear Energy Institute issued Revision 1 to Nuclear Energy Institute 09-14, "Guidance for the Management of Underground Piping and Tank Integrity," (ADAMS Accession No. ML110700122) with an expanded scope of components which included underground piping that was not in direct contact with the soil and underground tanks. On November 17, 2011, the NRC issued Temporary Instruction 2515/182, "Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks," to gather information related to the industry's implementation of this initiative. The licensee's buried piping and underground piping and tanks program was inspected in accordance with paragraph 03.02a of the temporary instruction and it was confirmed that activities which correspond to completion dates specified in the program which have passed since the Phase 1 inspection have been completed.

Additionally, the licensee's buried piping and underground piping and tanks program was inspected in accordance with paragraph 03.02.b of the temporary instruction and responses to specific questions were submitted to the NRC headquarters staff. Based upon the scope of the review described above, Temporary Instruction 2515/182 was completed.

b. Findings

Introduction. Inspectors identified a finding of very low safety significance (Green) and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform an adequate extent of condition assessment for a Significance Level 3 adverse condition in accordance with Callaway's corrective action program. While performing an evaluation of pitting corrosion identified on buried refueling water storage piping, the licensee failed to provide an adequate technical justification for not expanding the scope of their review beyond the specific piping when pitting corrosion was identified in the original sample selection.

Description. In April 2013, the licensee performed an excavation and inspection of several buried lines near the refueling water storage tank as part of the industry initiative to control the degradation of buried piping and tanks. Among the buried lines inspected were a 24-inch diameter supply line from the refueling water storage tank to emergency core cooling system suction and a 4-inch diameter return line. Both runs of buried pipe are type 304 stainless steel. Both lines were discovered to have pitting corrosion in the heat-affected zones of butt-welded piping connections. The 4-inch return line had pitting around four welds that encompassed the circumference of the pipe within the heat-affected zones. The safety-related 24-inch supply line had fewer, but deeper pits in the heat-affected zones of one weld. A subsequent dye penetrant test of these pits identified a small crack in one pit. Analysis was performed to demonstrate effective wall thickness of both pipes in the area affected by the pitting and the safety-related 24-inch line was repaired under an ASME Section XI repair package.

The licensee performed a cause determination for the pitting in both pipes as specified in Procedure APA-ZZ-00500, Appendix 14, "Adverse Condition – Significance Level 3." The licensee determined the cause was pitting attack accelerated by sensitization and environmental conditions conducive to corrosion. The licensee concluded that sensitization, which is likely the result of a failure to properly maintain interpass temperature between weld passes, reduced the effectiveness of the passive oxide layer in the stainless steel which, when combined with an electrolytically conducive environment, left the piping vulnerable to pitting.

Licensee Procedure APA-ZZ-00500, Appendix 14, "Adverse Condition – Significance Level 3," required the reviewer to conduct an extent of condition review to identify other potentially susceptible systems or components. The licensee concluded, based on the extent of condition review for this issue, that the environmental conditions for these pipes were unique due to poor soil drainage and specifically stated that the extent of condition would be limited to the visually inspected areas.

The inspectors reviewed the cause evaluation and determined that the licensee essentially failed to consider any potentially susceptible locations (adjacent to welds) in the additional 50 feet of buried piping for each of these piping runs. Although welding was implicated as a contributing factor in the cause evaluation, the licensee made no effort to understand the extent to which past welding practices could have impacted other portions of this same piping.

During the same approximate timeframe, the licensee performed guided wave testing of the additional buried portion of the subject piping; however, the results of this testing were not utilized in the cause or extent of condition evaluation. The guided wave testing identified six minor, one medium, and one anomalous indication on the 24-inch piping. The licensee also obtained soil samples as part of the excavation, but performed no technical analysis identifying uniquely corrosion-conducive conditions in the immediate area or ruled out the possibility of such conditions in adjacent areas.

The lack of an adequate technical justification for limiting the extent of condition to only the inspected piping is not consistent with licensee guidance of performing an extent of condition review and constitutes a performance deficiency. Specifically, licensee Procedure APA-ZZ-00500, Appendix 14, "Adverse Condition – Significance Level 3," step 4.2.4, requires that an extent of condition review be performed which determines the population of components or systems that have the potential to exhibit the same undesired condition as the item being investigated.

Analysis. The failure to perform an adequate extent of condition review of the pitting of the buried 24-inch refueling water storage tank to emergency core cooling system supply line in accordance with their procedure was a performance deficiency. The performance deficiency is more than minor and therefore a finding because, if left uncorrected, it has the potential to lead to a more significant safety concern if other welds on this same pipe render it susceptible to pitting corrosion in the weld heat-affected zones. The finding affects the Mitigating System Cornerstone because the performance deficiency is related to the emergency core cooling system's ability to conduct short-term decay heat removal.

This finding was assessed using Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," and was determined to be of very low safety significance because the finding is not a design or qualification deficiency; did not result in the loss of operability or functionality of a single train for greater than the technical specification allowed outage time; and did not represent an actual loss of safety function for greater than 24 hours. This finding has a cross-cutting aspect in the conservative bias component of the human performance cross-cutting area because the licensee did not use conservative decision-making practices that emphasize prudent choices over those that are simply allowable. Specifically, rather than expanding the scope of the extent of condition to include other sections of the affected piping that could have the same susceptibility to pitting due to poor welding practices, personnel limited the scope of their review to what they observed [H.14].

Enforcement. Title 10 of the *Code of Federal Regulations*, Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be accomplished in accordance with procedures. Procedure APA-ZZ -00500, Appendix 14, "Adverse Condition – Significance Level 3,"

requires licensee personnel to conduct an extent of condition review that identifies whether the potential exists for the problem being evaluated to cause further damage to the structures, systems, or components in question. Contrary to the above, between April and July 2013, the licensee did not accomplish activities affecting quality in accordance with procedures. Specifically, licensee personnel did not evaluate the possibility of further damage to the borated refueling water storage piping caused by increased corrosion susceptibility as the result of improper welding practices, nor did they eliminate the possibility that the environment conducive to corrosion could occur in other locations. Because this finding is of very low safety significance and was entered into the corrective action program as Callaway Action Request 201402168, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a. of the NRC Enforcement Policy: NCV 05000483/2014003-02 "Inadequate Extent of Condition Review."

.2 (Closed) Unresolved Item 05000483/2013005-01, Solid State Protection System Modifications

During the fourth quarter of the 2013 inspection cycle, inspectors identified an unresolved item associated with the implementation of the licensee's process to comply with 10 CFR 50.59 for a digital modification of the solid state protection system (SSPS) logic and control boards. The SSPS logic and control boards provide the coincidence logic to produce actuation signals for operation of the reactor protection system and the engineered safety features actuation systems. Modification Package 10-0053, "SSPS Printed Circuit Board Replacement," Version 000.2, evaluated a digital modification to the existing SSPS logic and control boards. This modification replaced existing obsolete printed circuit boards using fixed logic devices (i.e., transistor-transistor logic) with replacement boards using complex programmable logic devices (CPLD) supplied by Westinghouse.

The inspectors reviewed the 10 CFR 50.59 evaluation and the Westinghouse supporting information for the replacement cards. The inspectors identified various issues of concern associated with the design, testing, and operation of the replacement circuit boards, that had the possibility of creating a malfunction of the SSPS with a different result as described in the updated final safety analysis report. The inspectors' specific issues of concern were:

- The 10 CFR 50.59 evaluation did not contain sufficient information to exclude the "data file" from the definition of "Base Software" and the associated design considerations in Nuclear Energy Institute 01-01, "Guideline on Licensing Digital Upgrades."

- Second party commercial vendors were involved in the manufacturing of the CPLDs as well as the development of the "data file" software. The inspectors found that there was not sufficient information in the 10 CFR 50.59 evaluation and supporting vendor information to determine the level of quality assurance placed into the development of the CPLDs to ensure reliable operation of this logic device. Furthermore, licensee discussions with Westinghouse confirmed that the second party commercial vendors were not qualified to 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."

- The testing performed by the vendor for the development of the CPLDs only covered the combinations of inputs and outputs (hardware functional testing) required for the design function of the SSPS. However, the 50.59 evaluation and supporting vendor information did not contain adequate information to determine if the testing performed by the vendor was sufficient to cover other possible sequence of device states due to the relative complexity of the CPLDs' operation. This would include software-induced states associated with the CPLDs themselves and the embedded "data file," which could result in malfunctions of the SSPS.

Following the issuance of the unresolved item, the inspectors reviewed additional Westinghouse topical and test reports which supported the licensee's 10 CFR 50.59 safety evaluation conclusion that a license amendment was not necessary for this digital upgrade. The inspection results are as follows:

- The inspectors determined that the licensee's modification package correctly considered the internal CPLD's software configuration as an "adverse" change to the design function of the SSPS; therefore, the licensee correctly completed the 10 CFR 50.59 safety evaluation for the change.

- In consultation with the Office of Nuclear Reactor Regulation, Instrumentation and Controls Branch, the inspectors determined Westinghouse audited the manufacturer under the Westinghouse 10 CFR Part 50, Appendix B quality assurance program.

- The inspectors determined that the testing was beyond the licensee's normal functional testing which only manipulated CPLD inputs which were necessary to meet the safety function of SSPS. The test procedure manipulated all inputs available to the CPLD to ensure the correct device output was correct.

Using the guidance contained in NRC Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," and NRC Regulatory Issue Summary 2002-22, "Use of EPRI/NEI Joint Task Force Report, "Guideline on Licensing Digital Upgrades," the inspectors did not identify a violation of NRC requirements. Therefore, Unresolved Item URI 05000483/2013005-01, "Solid State Protection System Modifications," was closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On February 12, 2014, the inspector conducted a debrief of the review of the licensee's buried piping program. After additional in-office review, the inspector conducted an exit meeting with Mr. G. Kramer, Director of Engineering Programs, on March 28, 2014. The licensee acknowledged the issues presented. The inspector verified that no proprietary information was reviewed.

On April 24, 2014, the inspector presented the results of the onsite inspection of the licensee's emergency preparedness program to Mr. D. Neterer, Vice President, Engineering, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On July 1, 2014, the inspectors presented the inspection results to Mr. F. Diya, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

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 the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- Title 10 of the *Code of Federal Regulations*, Part 50.54(q)(2), requires in part, that a reactor licensee follow an emergency plan meeting the requirements of 10 CFR Part 50, Appendix E, and the 10 CFR 50.47(b) planning standards. Contrary to the above, on July 26, 2013, Callaway Plant failed to follow an emergency plan meeting the requirements of the 10 CFR 50.47(b) planning standards. Specifically, the licensee failed to implement an emergency action level scheme meeting the requirements of 10 CFR 50.47(b)(4) during a plant event. The licensee classified a Notification of Unusual Event on July 26, 2013, based on emergency action level HU2.1, "Non-hostile initiated fire not extinguished within 15 minutes of Control Room notification or valid Control Room alarm." The licensee subsequently determined that the emergency action level did not apply because the fire was not in a location listed on Table H-2 as required by the technical basis document. The finding was more than minor because it affected the Emergency Preparedness Cornerstone objective and the emergency response organization performance cornerstone attribute. The finding was evaluated using Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Attachment 2, "Failure to Implement," and was determined to be of very low safety significance (Green) because the classification was a Notification of Unusual Event. The issue was entered into the licensee's corrective action program as Callaway Action Requests 201305943 and 201305944.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

M. Daly, Supervisor, Corrective Action Program
F. Diya, Senior Vice President and Chief Nuclear Officer
R. Eickelman, Supervisor, Operations
T. Elwood, Supervising Engineer, Regulatory Affairs/Licensing
J. Geyer, Director, Nuclear Oversight
L. Graessle, Senior Director, Operations Support
J. Imhoff, System Engineer, NSSS Systems
J. Kovar, Engineer, Regulatory Affairs/Licensing
G. Kramer, Director, Engineering Programs
S. Maglio, Manager, Regulatory Affairs
P. McKenna, Assistant Manager, Protective Services (Emergency Preparedness)
J. McLaughlin, System Engineer, NSSS Systems
S. Petzel, Engineer, Regulatory Affairs/Licensing
D. Neterer, Vice President, Nuclear Operations
C. Smith, Manager, Radiation Protection

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000483/2014003-01	FIN	Plastic Shipping Plug in Rosemount Transmitter (Section 1R15)
05000483/2014003-02	NCV	Inadequate Extent of Condition Review (Section 4OA5)

Closed

2515/182	TI	Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks (Section 4OA5)
05000483/2013005-01	URI	Solid State Protection System Modifications (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

Number	Title	Revision
AUE-ADM-2222	Communication and Coordination	0
AUE-ADM-2223	Disturbance Reporting	0
AUE-ADM-2227	Reliability Coordination – Responsibility and Authorities	0

Procedures

Number	Title	Revision
DTI-E-00009	Using Safety Monitor	3
DP-ZZ-01129	Callaway Energy Center Risk Assessment	40
PDP-ZZ-00027	Summer Reliability Program	4
ODP-ZZ-00002, Attachment 4	Equipment Status Control	72
OSP-NB-00001	Class 1E Electrical Source Verification	38
OSP-NE-00003	Technical Specification Actions – A.C. Sources	26
OTO-MA-00008	Rapid Load Reduction	29
OTO-ZZ-00012	Severe Weather	27

Callaway Action Requests

201305943	201308354	201400743	201402651	201207599

Section 1R04: Equipment Alignment

Procedures

Number	Title	Revision
OTN-GK-00001	Control Building Heating, Ventilation and Air Conditioning System	42
OTN-GK-00001, Checklist 1	Control Building Heating, Ventilation and Air Conditioning System Electrical Equipment Lineup	13
OTN-GK-00001, Checklist 2	Control Building Heating, Ventilation and Air Conditioning System Normal Valve Lineup by Compartment	15
OTS-ZZ-00007	Plant Cold Weather	28
OTN-EJ-00001	Residual Heat Removal System	27
OTN-EJ-00001, Checklist 2	Residual Heat Removal System – B RHR Electrical Equipment Standby Safety Injection Lineup	19
OTN-EJ-00001, Checklist 4	Residual Heat Removal System – B RHR System Standby Safety Injection Valve Lineup (Includes Components on SIS Hot Leg Recirc)	20
OTN-EJ-00001, Checklist 8	Residual Heat Removal System – B RHR Train Main Control Board Standby Safety Injection Lineup	19
OTN-AL-00001	Auxiliary Feedwater System	32
OTN-AL-00001, Checklist 1	Auxiliary Feedwater Valve Alignment	21
OTN-GG-00001	Fuel Building HVAC System	28

Procedures

Number	Title	Revision
OTN-GG-00001, Checklist 1	Fuel Handling Building HVAC System Valve and Damper Lineup	15
OTN-GG-00001, Checklist 2	Fuel Handling Building HVAC System Breaker Lineup	13
OTN-GG-00001, Checklist 3	Fuel Handling Building HVAC System Switch Lineup	13

Drawings

Number	Title	Revision
M-22EJ01	Piping & Instrumentation Diagram – Residual Heat Removal System	59
M-22GK01	Piping & Instrumentation Diagram Control Building Heating, Ventilation and Air Conditioning	20
M-22GK02	Piping & Instrumentation Diagram Control Building Heating, Ventilation and Air Conditioning	19
M-22GK03	Piping & Instrumentation Diagram Control Building Heating, Ventilation and Air Conditioning	23
M-22GK04	Piping & Instrumentation Diagram Control Building Heating, Ventilation and Air Conditioning	19
M-22AL01	Piping & Instrumentation Diagram, Auxiliary Feedwater System	43

Callaway Action Requests

201300894 201402724 201403015 201401549

Job

14000300

Miscellaneous

Number	Title	Date
2013002	Vibration Induced Wear on SGK04A/B and SGK05A/B has Caused Unplanned Out-of-Service Time	May 26, 2013

Section 1R05: Fire Protection

Procedures

Number	Title	Revision
	Fire Preplan Manual	37
FPP-ZZ-00001, Attachment 2	Pre-Plan/Fire Area #A-2A, Auxiliary Building, 1967' Elevation	24
FPP-ZZ-00004, Attachment 17	Pre-Plan/Fire Area #C-13, Control Building and Communications Corridor, 2016' Elevation	17
FPP-ZZ-00004, Attachment 26	Pre-Plan/Fire Area #C-21, Control Building and Communications Corridor, 2032' Elevation	17
FPP-ZZ-00004, Attachment 32	Pre-Plan/Fire Area #C-27, Control Building and Communications Corridor, 2047' Elevation	17
FPP-ZZ-00004, Attachment 43	Pre-Plan/Fire Area #C-22, Control Building and Communications Corridor, 2032' Elevation	17
FPP-ZZ-00007, Attachment 4	Pre-Plan/Fire Area #T-14, Transformers (West of Turbine Building – In Yard) 2000'	13

Drawings

Number	Title	Revision
A-2802	Fire Delineation – Floor Plan, Elevation 2000'-0"	12
A-2804	Fire Delineation – Floor Plan, Elevation 2047'-6"	25

Miscellaneous

Number	Title	Date
RFR 14421	Approval of ABC Fire Extinguishers on Carts	July 2, 1997

Section 1R06: Flood Protection Measures

Drawing

Number	Title	Revision
M-2G051	Equipment Locations – Control & Diesel Generator Buildings and Communication Corridor Plan Elevation 2000'-0" and 2016'-0"	39

Callaway Action Requests

201401795	201203302	201403604	201403841

Job

13514414

Miscellaneous

Number	Title	Date
RFR 018299A	Use and Storage of Protective Mats	October 7, 1997
	Photos of Manhole MH01B	December 12, 2013
	Photos of Manhole MH01B	June 5, 2014

Section 1R07: Heat Sink Performance

Jobs

09511826 09511945

Section 1R11: Licensed Operator Requalification Program

Procedures

Number	Title	Revision
ODP-ZZ-00001	Operations Department – Code of Conduct	89
OSP-AL-V001C	Turbine Driven Auxiliary Feedwater Valve Inservice Test	53
OTG-ZZ-00004, Addendum 1	Reactor Control During Power Operations	1
OTN-BG-00002	Reactor Makeup Control and Boron Thermal Regeneration System	44

Miscellaneous

Number	Title	Date
CA2698	Procedure Controlled Temporary Modification Approval, Installation and Removal [OSP-AL-V001C Jumper Hoses]	April 27, 2014
T61.0810.8	Dynamic Simulator Exam Scenario, DS-13	February 25, 2014
T61.0810.8	Dynamic Simulator Exam Scenario, DS-19	February 26, 2014

Section 1R12: Maintenance Effectiveness

Procedures

Number	Title	Revision
APA-ZZ-00500 Appendix 1	Operability and Functionality Determinations	21
APA-ZZ-00500 Appendix 5	Maintenance Rule (MR)	16
EDP-ZZ-01114	Motor Operated Valve Program Guide	26

Drawing

Number	Title	Revision
E-23EF02	Essential Service Water to Service Water System Isolation Valve EFHV23	17

Callaway Action Requests

201301108	201400933	201307915	201400092	201401116

Jobs

14000573	05510322	11000253	13006167	13509117

Miscellaneous

Number	Title	Revision/Date
M-GL-390	Callaway Auxiliary Building Essential Service Water-Supplied Heating, Ventilation and Air Conditioning	1
OOA-SA-C066X	Engineered Safety Feature (ESF) Status Panel SA066X Alarm Information	14
OOA-SA-C066Y	Engineered Safety Feature Status (ESF) Panel SA066Y Alarm Information	15
RFR 16987	Jumper Close Torque Switch on Butterfly Motor Operated Valves with Close Safety Function	February 13, 2007

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

Procedures

Number	Title	Revision
EDP-ZZ-01129	Callaway Energy Center Risk Assessment	39
ODP-ZZ-00002	Equipment Status Control	74

Procedures

Number	Title	Revision
ODP-ZZ-00002 Appendix 2	Risk Management Actions for Planned Risk Significant Activities	8
ODP-ZZ-00002 Appendix 2 CL 1	Door Postings for A Train ESW and/or Emergency Diesel Generator being Out-of-Service	1
ODP-ZZ-00002 Appendix 2 CL 5	Door Postings for TDAFP (PAL02) being Out-of-Service	1
OTN-GK-00001	Control Building Heating, Ventilation and Air Conditioning System	30

Callaway Action Requests

201402036	201403004	201403463	201403474	201403486
201308995	201110202	201307763	201400020	201309694

Jobs

13512067	14501172	14501233	14501194	14002312

Miscellaneous

Number	Title	Date
MG 10-2001	Energy Management Guide for Selection and Use of Fixed Frequency Medium AC Squirrel-Cage Polyphase Induction Motors	2001

Section 1R15: Operability Evaluations

Procedures

Number	Title	Revision
MTE-ZZ-NG001	Leak Control, Recovery, and Recycling of Refrigerant	13
MTE-GK-QC001	Control Room and Class 1E Air Conditioning Unit Charging	9
OTN-EN-00001	Containment Spray System	23

Callaway Action Requests

201011748	201101473	201203302	201208791	201401278
201401587	201401683	201401795	201403300	201403604
201403902				

Jobs

14000139	14504911	07511235

Miscellaneous

Number	Title	Revision
M-GG-404	Fuel Building Cooling Load and Equipment Selection	0
M-GG-404, Addendum 4	Change in Fuel Building Roof R Value	0

Section 1R19: Post-Maintenance Testing

Procedures

Number	Title	Revision
APA-ZZ-00340	Surveillance Program Administration	35
APA-ZZ-00340, Appendix 1	Surveillance Frequency Control Program	0
APA-ZZ-00340, Appendix 4	Surveillance Frequency Control Program Surveillance Test Interval List	2
ESP-GG-03004	FGG02A In-Place Bypass Leakage Test	16
ETP-ZZ-03005	In-Place Bypass Leakage Testing of HEPA Filters	9
ETP-ZZ-03005, Attacment1	HEPA Filter Leak Test Results	9
MSE-GG-QG001	Emergency Exhaust System Flow Rates – A Train	14
OSP-GG-0001A	A Train Emergency Exhaust System Operability Test	10
OSP-NE-0001A	Standby Diesel Generator A Periodic Tests	55
OSP-EF-P001B	Essential Service Water Train B Inservice Test	68
OSP-EF-0003B	Train B Ultimate Heat Sink Cooling Tower Fans Test	9
OSP-EJ-P001A	Residual Heat Removal Train A Inservice Test – Group A	55

Drawings

Number	Title	Revision
M-22GG01(Q)	Piping and Instrumentation Diagram, Fuel Building HVAC	15
M-22GG02(Q)	Piping and Instrumentation Diagram, Fuel Building HVAC	13

Callaway Action Requests

201402064	201402066	201402086	201402101	201402113
201402761	201402775	201402810	201404106	

Jobs

11504452	11508685	12511470	12511471	12511473
12512029	12513399	13512067	14001821	

Miscellaneous

Number	Title	Revision
FSAR 6.5.1	Engineered Safety Feature Filter Systems	OL-19
FSAR Table 6.5-1	ESF Filtration Systems Input Parameters To Chapter 15.0 Accident Analysis	OL-13
FSAR Table 9.4-6	Design Data For Fuel Building HVAC System Components	OL-17
Technical Specification 3.7.13	Emergency Exhaust System	Amendment Number 198

Section 1R22: Surveillance Testing

Procedures

Number	Title	Revision
OSP-BB-00009	Reactor Coolant System Inventory Balance	35
OSP-GG-0001A	A Train Emergency Exhaust System Operability Test	10
OSP-AL-V001C	Turbine Driven Auxiliary Feedwater Valve Inservice Test	53
OSP-GT-00005	Containment Isolation Dampers Operational Test	18
OSP-AL-P001B	Motor Driven Auxiliary Feedwater Pump B Inservice Test – Group A	57
OSP-EM-P001A	Safety Injection train A Inservice Test – Group B	48

Drawings

Number	Title	Revision
M-22AL01	Piping and Instrumentation Diagram, Auxiliary Feedwater System	43
M-22KA05	Piping and Instrumentation Diagram, Compressed Air System	16

Drawings

Number	Title	Revision
M-22GT01	Piping and Instrumentation Diagram, Containment Purge Systems HVAC	26

Callaway Action Request

201402889

Jobs

14502916	14501153	14001902	14501883	14502261
14505240	14502660			

Miscellaneous

Number	Title	Date
CA2698	Procedure Controlled Temporary Modification Approval, Installation and Removal [OSP-AL-V001C Jumper Hoses]	April 27, 2014
CA2698	Procedure Controlled Temporary Modification Approval, Installation and Removal [OSP-EM-P001A Temporary Gauges]	April 27, 2014

Section 1EP2: Alert and Notification System Testing

Procedures

Number	Title	Revision
KSP-ZZ-00008	Tone Alert Radios	4-5
KSP-ZZ-00110	Siren Alerting System Testing	10-11

Callaway Action Requests

201206488	201206544	201306554	201306560	201207337
201208462	201208644	201208970	201300045	201300495
201300598	201302644	201302797	201303103	201304143
201304533	201307744	201400415		

Miscellaneous

Number	Title	Date
	Letters of Agreement, Callaway Electric Cooperative	January 9, 2014, and January 8, 2013

Miscellaneous

Number	Title	Date
	Letters of Agreement, Three Rivers Electric Cooperative	January 9, 2014, and January 8, 2013
	Letters of Agreement, Ameren Energy Delivery	January 9, 2014, and January 8, 2013
	Letters of Agreement, Missouri School for the Deaf	January 9, 2014, and January 8, 2013
	Callaway Plant, Alert and Notification System Design Report	April 2011
	Callaway Plant, Alert and Notification System Design Report	January 2013
	Siren System Maintenance Logs, 2013, 2014	
	Siren System Semi-Annual Preventative Maintenance and Repair Checklists, 2013, 2014	
12501700/500	Annual Tone Alert Radio Audit Surveillance	March 19, 2013
13503075/500	Annual Tone Alert Radio Audit Surveillance	March 17, 2014
12512992	Monthly Distribution of Tone Alert Radios	December 6, 2012
13503580	Monthly Distribution of Tone Alert Radios	March 29, 2013
13509332	Monthly Distribution of Tone Alert Radios	August 1, 2013
13512726	Monthly Distribution of Tone Alert Radios	November 1, 2013
14501115	Monthly Distribution of Tone Alert Radios	February 1, 2014
14502119	Monthly Distribution of Tone Alert Radios	March 4, 2014

Section 1EP3: Emergency Response Organization Staffing and Augmentation System

Procedures

Number	Title	Revision
EIP-ZZ-00200	Activation of the Callaway Plant Emergency Callout System	16
EIP-ZZ-A0001	Emergency Response Organization	15
KSP-ZZ-00201	Emergency Augmentation Drill / Test	6

Callaway Action Requests

201206366	201207063	201208031	201208673	201304680

Miscellaneous

Number	Title	Date
	Emergency Notification System (Everbridge Proposal)	June 6, 2012
12506726	ERO Augmentation Drill/Test, Augmentation Testing Results	September 27, 2012
12510457	ERO Augmentation Drill/Test, Augmentation Testing Results	November 14, 2012
12512288	ERO Augmentation Drill/Test, Augmentation Testing Results	March 1, 2013
13502338	ERO Augmentation Drill/Test, Augmentation Testing Results	June 10, 2013
13507493	ERO Augmentation Drill/Test, Augmentation Testing Results	August 29, 2013
13510470	ERO Augmentation Drill/Test, Augmentation Testing Results	November 20, 2013
13513640	ERO Augmentation Drill/Test, Augmentation Testing Results	January 15, 2014

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Miscellaneous

Title	Date
50.54(q) Evaluation for the Radiological Emergency Response Plan, Revision 44	March 25, 2014

Section 1EP5: Maintenance of Emergency Preparedness

Procedures

Number	Title	Revision
	Callaway Radiological Emergency Response Plan	42, 43
APA-ZZ-00500	Corrective Action Program	60
APA-ZZ-00500, Appendix 17	Screen Process Guidelines	19-20
EIP-ZZ-00260	Event Closeout and Plant Recovery	25
EIP-ZZ-A0020	Maintaining Emergency Preparedness	28
GDP-ZZ-01810	Nuclear Safety Oversight Assessment Coverage	51
KDP-ZZ-00013	Emergency Response Facility and Equipment Evaluation	11

Procedures

Number	Title	Revision
KDP-ZZ-00013, Appendix 1	Equipment Import to Emergency Response Matrix	0
KDP-ZZ-00400	RERP Impact Evaluations and Changes	21
KSP-ZZ-00602	Verification of Emergency Instruction Postings	2
KDP-ZZ-02001	Drill and Exercise Program	14

Callaway Action Requests

201206556	201207063	201207686	201208519	201300598
201300896	201304389	201304521	201304664	201305116
201306031	201306221	201306237	201306493	201306552
201306640	201306649	201307252	201307316	201307457
201307458	201307697	201307875	201308282	201308781
201400836	201401069	201401110	201401558	

Miscellaneous

Number	Title	Date
AP12-008	Nuclear Oversight Audit of Emergency Preparedness	August 27, 2012
AP-13-007	Nuclear Oversight Audit of Emergency Preparedness	September 5, 2013
SP12-023	Functional Area Assessment Report, October 16 to 31, 2012	March 13, 2013
SP12-024	Functional Area Assessment Report, November 1 to 15, 2012	March 18, 2013
SP12-025	Functional Area Assessment Report, November 16 to 30, 2012	April 1, 2013
SP13-001	Functional Area Assessment Report, January 1 to 31, 2013	July 13, 2013
SP13-020	Functional Area Assessment Report, September 1 to 30, 2013	October 31, 2013
SP14-002	Functional Area Assessment Report, February 1 to 28, 2014	March 25, 2014
	After-Action Report: Radiological Monitoring Drill	September 6, 2012
	After-Action Report: Certification Drill	September 28, 2012

Miscellaneous

Number	Title	Date
	After-Action Report: ERO Minimum Staffing Drill, Cycle 12-5	
	After-Action Report: Health Physics Drill	October 25, 2012
	After-Action Report: Shift Manager Drill	November 1, 2012
	After-Action Report: Contaminated Injured Worker Drill	November 8, 2012
	After-Action Report: ERO Training Tabletop Drill	February 2013
	After-Action Report: Team 3 Drill	December 4, 2012
	After-Action Report: Teams 1 and 2 Turnover Drill	March 5, 2013
	After-Action Report: Notification of Unusual Event	July 26, 2013,
	After-Action Report: Team 3 Rehearsal Exercise	August 13, 2013
	After-Action Report: Team 3 Biennial Exercise	September 24, 2013
	After-Action Report: Rapid Responder Drills	November to December 2013
	After-Action Report: Health Physics Drill	March 13, 2014
	After-Action Report: Team Drill	March 13, 2014
	After-Action Report: Table Top Drills	January to February 2014
12507720	Callaway Plant, 2013 Population Update Analysis	May 29, 2013
	50.54(q) Evaluation for EIP-ZZ-00102	May 15, 2013
	50.54(q) Evaluation for EIP-ZZ-01211	July 10, 2013
	50.54(q) Evaluation for EIP-ZZ-PR020	May 17, 2013
	50.54(q) Evaluation for KDP-ZZ-02001	March 20, 2013
	50.54(q) Evaluation for KSP-ZZ-00110	January 17, 2014
	50.54(q) Evaluation for RERP	September 13, 2013
	50.54(q) Evaluation for Procedure E-1, Revision 15	October 3, 2013
	50.54(q) Evaluation for EIP-ZZ-00240 and EIP-ZZ-C0010	July 22, 2013
	50.54(q) Evaluation for EIP-ZZ-PR020	October 16, 2013
	50.54(q) Evaluation for KDP-ZZ-00300	April 15, 2013
	50.54(q) Evaluation for KDP-ZZ02002	July 16, 2013
	50.54(q) Evaluation for OTO-SK-00003, Revision 5	October 3, 2013

Miscellaneous

Number	Title	Date
201200168-04	Self-Assessment: EP Field Monitoring and E Team Dispatch	October 15, 2012
2013000022-12	Self-Assessment: EP Program Assessment and Exercise Readiness	September 25, 2013
2013000024-19	Self-Assessment: Emergency Response Organization Training	November 27, 2013
1150946/500	Emergency Instruction Posting Locations	July 16, 2012
12507973/500	Emergency Instruction Posting Locations	July 19, 2013

Section 1EP6: Drill Evaluation

Callaway Action Requests

201403185 201403200 201403220

Miscellaneous

Number	Title	Date
	Emergency Preparedness Team Drill	May 8, 2014

Section 4OA1: Performance Indicator Verification

Procedures

Number	Title	Revision
EIP-ZZ-00101	Classification of Emergencies	48-49
EIP-ZZ-00101, Addendum 1	Emergency Action Level Classification Matrix	3
EIP-ZZ-00101, Addendum 2	Emergency Action Level Technical Basis Document	6-7-8
EIP-ZZ-00102	Emergency Implementing Actions	53-54-55-56
EIP-ZZ-00201	Notifications	49-50
EIP-ZZ-00201, Addendum A	Control Room Notification Package	20-21
EIP-ZZ-00201, Addendum C	EOF Notification Package	21
EIP-ZZ-00212	Protective Action Recommendations	24-25
KDP-ZZ-02000	NRC Performance Indicator Data Collection	15

Callaway Action Requests

201207949	201306537	201309521	201309528	201401110

Miscellaneous

Number	Title	Date
	2Q13 to 1Q14 OSP-BB-00009 results	May 28, 2014
CA2567	NRC Performance Indicator Transmittal Report	July 3, 2013
CA2567	NRC Performance Indicator Transmittal Report	October 21, 2013
CA2567	NRC Performance Indicator Transmittal Report	January 9, 2013
CA2567	NRC Performance Indicator Transmittal Report	April 9, 2013
	MSPI Derivation Report, Heat Removal System	June 2013
	MSPI Derivation Report, Heat Removal System	September 2013
	MSPI Derivation Report, Heat Removal System	December 2013
	MSPI Derivation Report, Heat Removal System	March 2014

Section 4OA2: Identification and Resolution of Problems

Procedures

Number	Title	Revision
APA-ZZ-00007	Nuclear Oversight Organization, Responsibility and Conduct of Operations	31
GDP-ZZ-01810	Nuclear Oversight Assessment Coverage	52
GDP-ZZ-01810	Nuclear Oversight Assessment Coverage	53
GDP-ZZ-01810	Nuclear Oversight Assessment Coverage	54
GDP-ZZ-01820	Nuclear Oversight Functional Area Assessment	4
GDP-ZZ-01820	Nuclear Oversight Functional Area Assessment	5
GDP-ZZ-01820	Nuclear Oversight Functional Area Assessment	6

Callaway Action Requests

201401350	201402093	201403604	201400020	201403868

Miscellaneous

Number	Title	Revision
DTI-002	Desktop Instruction – Performance Assessment	14

Miscellaneous

Number	Title	Revision
DTI-011	Desktop Instruction – Nuclear Oversight Department - Statement of Vision, Mission, Goals, and Expectations	27
DTI-016	Desktop Instruction – NOS Performance Management	14
DTI-029	Desktop Instruction – Nuclear Oversight Audit & Surveillance Guide	41
DTI-029	Desktop Instruction – Nuclear Oversight Audit & Surveillance Guide	42

Section 4OA5: Other Activities

Procedures

Number	Title	Revision
APA-ZZ-00500	Corrective Action Program	57
EDP-ZZ-01011	Buried Pipe inspection Program	8
QCP-ZZ-05000	Liquid Penetrant Examination	23
QCP-ZZ-05019	Ultrasonic Thickness Measurement	13
13514548.505	CPRQH1001 Track Two Month Cathodic Protection Rectifier Survey	
12508427.500	Annual Cathodic Protection Survey	1
MSM-KJ-QT0001	10 Year Emergency Diesel Generator Fuel Oil Storage Tank Cleaning	10
APA-ZZ-00500, Appendix 14	Adverse Condition – Significance Level 3	15

Callaway Action Requests

200608046	200909892	201009242	201108240	201110490
201204441	201303200	201303205	201304105	201307568

Work Orders

08514026	10006447	10513868	10514536	11502794
11505576	11511955	1152530	13003026	13510911
13510912	13511349	13511350		

Miscellaneous

Number	Title	Revision/Date
M-2G006	Site Interface Underground Piping Location Drawing	August 12,1995
M-23BN01	Piping Isometric: Borated Refueling Water Storage System Auxiliary Building	June 3, 1981
BOP-PT-13-048	Liquid Penetrant Examination Report	April 26, 2013
BOP-PT-13-047	Liquid Penetrant Examination Report	May 2, 2013
5019-13-140	Ultrasonic Thickness Report	April 26, 2013
BN-29	Minwall Determination of Various Buried Piping for Refueling Outage 19	
Various	Laboratory Tests on Soil Samples	July 2009 – May 2013
10006447-500	As Found Buried Piping Inspection Form	May 23, 2013
1200481.401	Refueling Outage 19 GWT Assessment on Refueling Water Storage Tank Piping	November 7, 2013
	Buried Pipe Program Health Report Third Quarter 2013	October 15, 2013
	Buried Pipe Program Health Report Fourth Quarter 2013	January 15, 2014
	Self-Assessment of the Buried Pipe Inspection Program	July 28, 2009
	Self-Assessment of the Buried Pipe Inspection Program	September 16, 2011
	Buried Pipe Simple Self-Assessment	October 28, 2013
1000062.401	Site Specific Risk Report: Callaway Nuclear Plant	September 29, 2010
	Condition Assessment Plan	December 10, 2012
12000962	As Found Buried Piping Inspection Form	June 21, 2012
5019-10-250	Ultrasonic Thickness Report	May 5, 2010
5019-10-251	Ultrasonic Thickness Report	May 5, 2010
5019-12-011	Ultrasonic Thickness Report	June 25, 2012
12508427/500	Annual Cathodic Protection System Survey	June 24, 2013
	Cathodic Protection System Health Report	January 30, 2014
	Buried Piping Long Term Asset Management Plan	May 2013
2-BN-C1-F004	Weld Control Record	November 2, 1979
	Hydrostatic Pneumatic Test Report	March 13, 1982

Miscellaneous

Number	Title	Revision/Date
	Hydrostatic Pneumatic Test Report	January 28, 1982
MP 10-0053	Solid State Protection System Printed Circuit Board Replacement	000.2
Evaluation 13-02	50.59 Evaluation of Modification Package 10-0053	April 7, 2013
WNA-TR-02644-SCP	Solid State Protection System New Design Circuit Board Final Logic Test Report	0
0	Westinghouse Solid State Protection System Board Replacement Licensing Summary Report	0
WCAP-16769-P	Westinghouse Universal Logic Board Replacement Summary Report	0

Callaway SSPS Replacement Questions (05/13/2014)

1. As described in USAR Section 3.10, the SSPS was tested in accordance with the criteria specified in IEEE 344-1975. However, the replacement CLPD's were tested using the criteria defined in IEEE 344-1987. How were the differences in these IEEE standards reconciled?

2. What are the differences between the testing criteria used to seismically qualify the CPLD's and those used to seismically qualify the original SSPS?

3. Did Westinghouse use the same test inputs for the qualification of the CPLD's that were specified in WCAP-7817 for the original seismic design of the SSPS?

4. How does the seismic response spectra, used by Westinghouse in the development of the CLPD's, envelope the required design basis response spectra for the SSPS cabinets?